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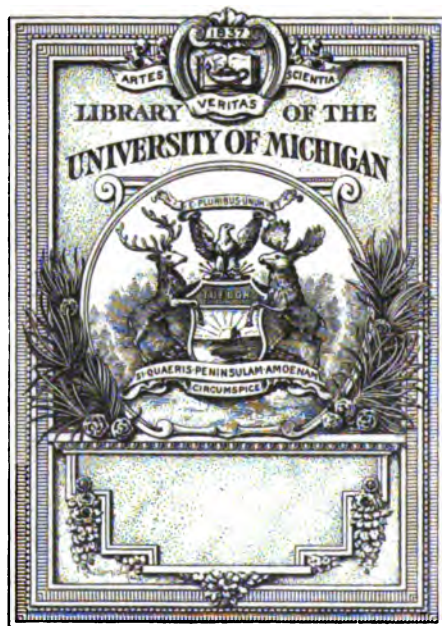
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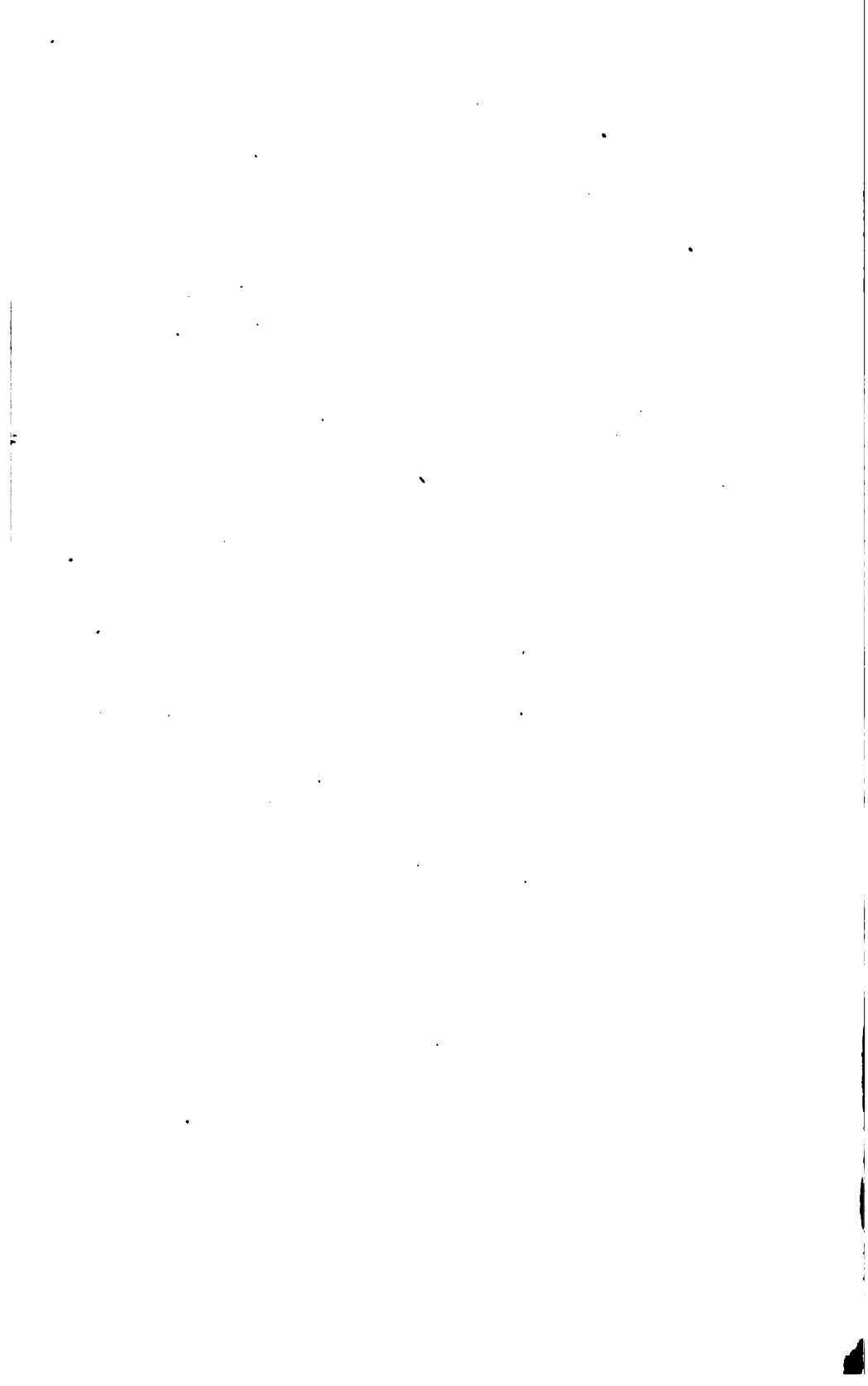


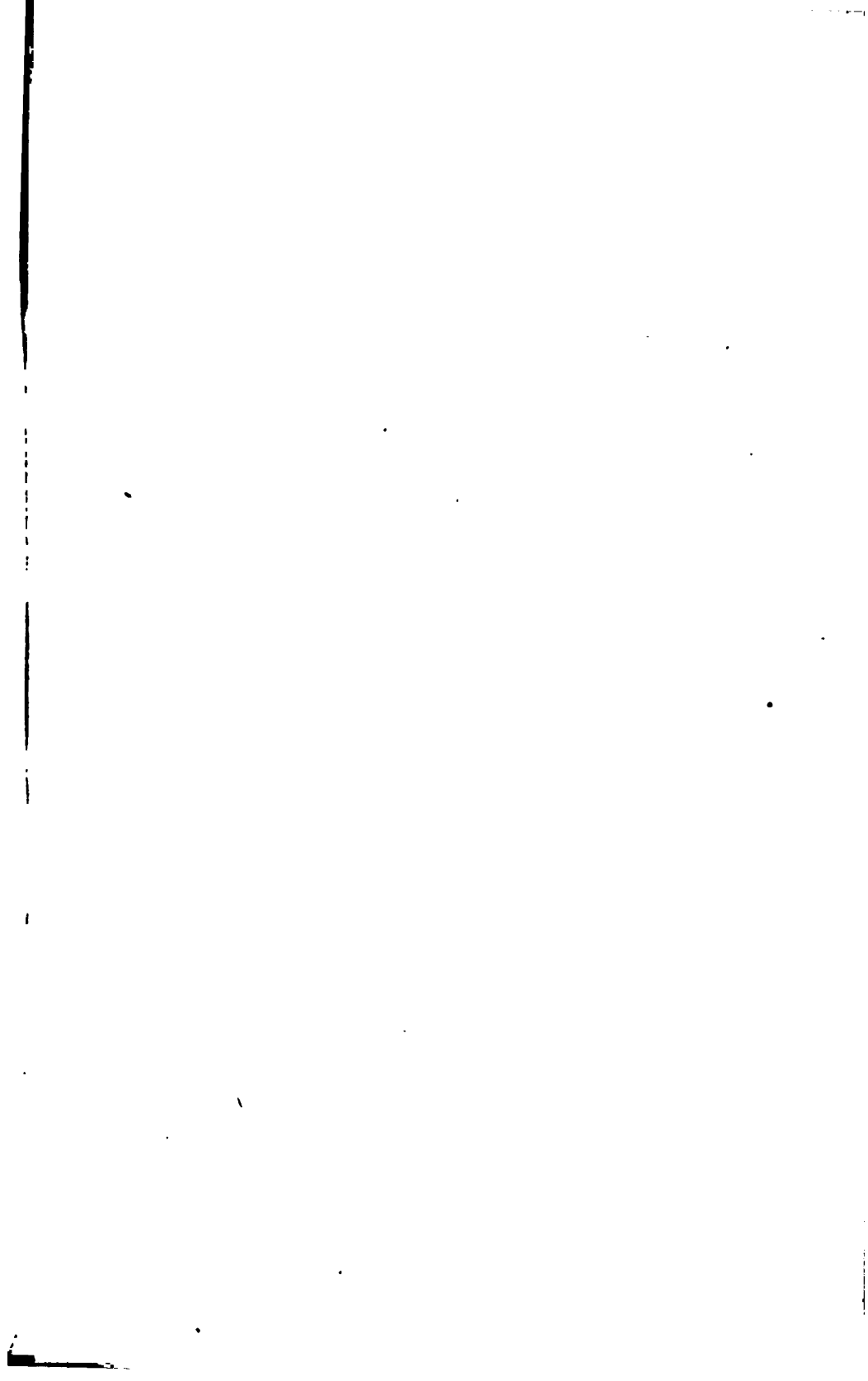
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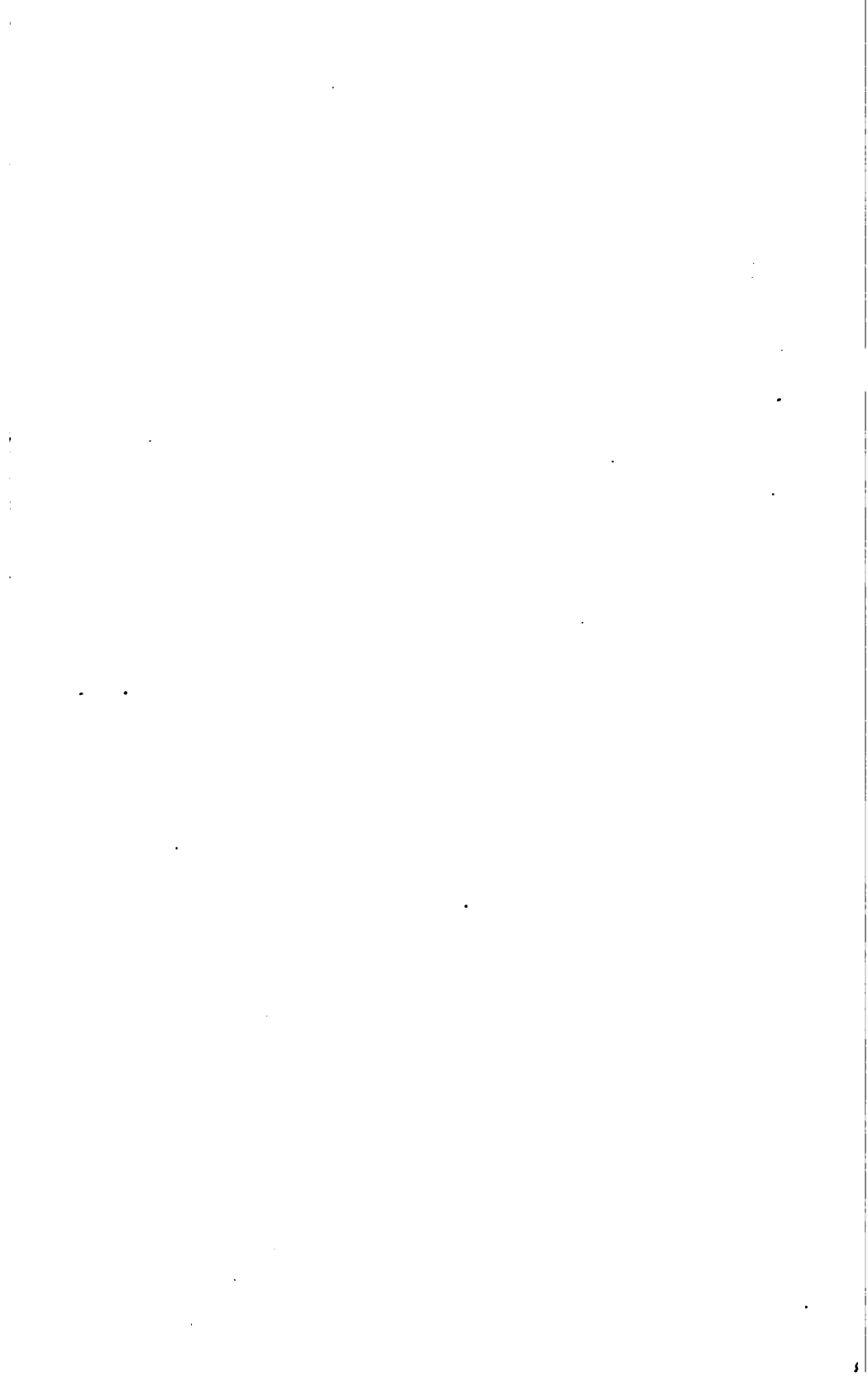
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# REPORTS

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FROM THE

## CONSULS OF THE UNITED STATES.

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VOL XX.

SEPTEMBER-DECEMBER, 1886.



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1886.



# SCOPE AND METHOD

OF

# CONSULAR TRADE REPORTS.

BEING A CORRESPONDENCE RESPECTING THE QUESTION  
OF DIPLOMATIC AND CONSULAR ASSISTANCE  
TO BRITISH TRADE ABROAD.



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.

1886.



[Circular.—Consular Reports.]

DEPARTMENT OF STATE,  
*Washington, September 20, 1886.*

*To the consular officers of the United States :*

GENTLEMEN: I inclose for your information a memorandum prepared by Mr. James Bryce, of Her Majesty's foreign office, with accompanying papers, having in view certain reforms in the English consular service. There can be little doubt that these reforms are enforced, if they were not suggested, by the series of reports of American consuls printed during the last five years, and that an attempt will be made to equal them in fullness of detail and merit. In calling your attention to this plan, I cannot but express the hope that you will continue your efforts with renewed diligence, and give the earliest possible information to the Department of whatever may be of interest to merchants and manufacturers of the United States occurring in your consular district. Measures will be taken in the Department to secure the prompt publication of the reports received, and every opportunity will be extended to consuls to maintain the high standard which these reports have attained.

I am, gentlemen, your obedient servant,

T. F. BAYARD.





## CORRESPONDENCE RESPECTING THE QUESTION OF DIPLOMATIC AND CONSULAR ASSISTANCE TO BRITISH TRADE ABROAD.

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### No. 1.

*Memorandum by Mr. Bryce respecting the question of diplomatic and consular assistance to British trade abroad.*

The impression that British trade suffers through insufficient action being taken on its behalf by Her Majesty's diplomatic and consular officers has been so frequently conveyed, both in Parliament and in the press, that the grounds for it deserve to be carefully examined, and a respectful consideration given to the suggestions offered by merchants and manufacturers for directing and enabling these officials to render more active help to interests admittedly vital to our prosperity. I must, however, begin by observing that, after reading many communications from mercantile persons and bodies, listening to many speeches, and conversing with many persons of ability and experience in commercial questions, I cannot discover that any want of efficiency is chargeable on the diplomatic and consular services as a whole. They seem, in the great majority of instances, to have carried out the instructions given them by the foreign office with energy and tact, and their unfailing courtesy is admitted even by those who allege that their zeal lags behind their discretion.

The communications received by the foreign office on this subject include both complaints and suggestions. I will take the former first. They are reducible to two—

1. It is said that the traditions of the foreign office and of the diplomatic service are unfriendly or, at best, indifferent, to the promotion of commercial interests; that there exists a certain disposition to snub British traders and to leave them without the countenance and support to which they are entitled.

A charge of this kind is so vague that it can only be tested by instances. The few instances that have been cited do not bear it out. Whatever may have been the case in time past, when rich men often entered the diplomatic service as an excuse for fashionable idleness, there seems to be at present a full appreciation on the part of the diplomatic and consular services of the extreme importance of our foreign trade to the general well-being and prosperity, as well as to the political influence, of this country. The duty now imposed on secretaries of legation and consuls of preparing annual commercial reports reminds the members of both services of the value which this office sets upon their functions in regard to trade, just as the creation and constant activity of a commercial department within the foreign office testify to the anxiety of

successive secretaries and under-secretaries of state, as well as of the permanent staff, to provide for the prompt and efficient handling of questions of this nature.

Sometimes it may happen that a consul does not identify himself so fully with a merchant's projects as the merchant expects, or is not found able to supply all the information which his traveling fellow-countrymen desire. It must, however, be remembered that the consul living on the spot sees difficulties which the visitor ignores, that in many foreign countries information is hard to procure, that a British consul at a busy post is a hard-worked man, and that he is obliged to exercise much caution in espousing and aiding the schemes of persons whose commercial standing at home is imperfectly known to him.

Cases are of course put forward in which the diplomatists or consuls of other States have successfully pushed the interests of their countrymen. But those who dwell on these cases in Parliament or in the press omit to notice either the cases in which British subjects have been similarly helped, or those, not rare, in which foreigners have suffered from the obtrusive attitude or grasping intrigues of diplomatists purporting to act on their behalf. There are countries in which the commercial interests of a European nation have suffered from the excessive energy of its consular agents—an energy which has aroused the suspicion and alarm of the native authorities.

I may also remark that the countries in which British traders have been most largely supplanted by other foreigners are not those from which complaints of the interference of foreign Governments to help their subjects are most frequently received. There are, for instance, parts of Central and South America where we appear to have lost ground, but where our rivals are not believed to owe their success to any official action on their behalf.

One specific complaint, however, needs further notice. It is alleged that in some of the more remote and less developed countries, such as those of the east and in the Republics of Central and South America, British subjects who seek to obtain contracts or concessions from the Government of the country suffer from the reluctance of British representatives to push their claims, while the subjects of some other state benefit by the constant pressure which the envoys of their Governments exert.

Even admitting this to be the case—though there seems to be some exaggeration in the statements made as to the action of these envoys, and still more in the estimate of the results attained thereby—it must be asked whether Her Majesty's representatives ought to be instructed to follow such an example. Pressure upon such foreign Governments as those referred to usually means pressure upon some particular official who has the contract to give away. It is apt to be accompanied and softened by corruption in the form either of a bribe or of some service to be rendered or commission paid to this official inconsistent with the duty which he owes to his own Government. A diplomatic representative joining in or even conniving at such inducements runs a double risk, that of lowering the dignity and character of his own country, and that of soiling his own personal reputation. People begin to hint that he is himself to share the expected gains, and as he cannot tell the whole truth he is obliged to remain under imputations which go far to destroy his influence and usefulness.

These dangers are especially visible in the case of loans at high rates of interest which the subjects of civilized states sometimes seek to press

on Eastern Governments. Besides the political mischief which is apt to flow from such usurious transactions (of which there has been ample evidence in recent years), they confer no benefit on either the commerce or manufactures of the country to which the lender belongs, and are therefore no proper objects of the benevolent intervention of his Government.

Moreover, he who forces a contract upon a foreign state makes his own Government to some extent responsible for the honesty and business capacity of the contractor—things which he may not be able to guarantee. In getting the better of competitors from other countries he rouses jealousies and creates grounds of quarrel between his own and other European Governments; and in identifying himself with the contractor he disposes the latter to believe that he may rely on the power of his Government to compel the payment of such debts as the foreign state may incur under the contract. Bearing all this in mind, I believe that if our diplomatists have erred in this matter by abstention they have erred on the safer side. Cases may of course occur where another European Government seeks to use its political influence to obtain exceptional advantages for its subjects from an Eastern state. In such cases it is no more than right that our envoys should remonstrate, and insist on an equally favorable hearing for British subjects as for other foreigners; but this, I believe, is the regular practice of Her Majesty's agents, and has been repeatedly approved by the foreign office.

2. The other complaint is that the information regarding commercial matters which is transmitted from abroad is not of the right kind, comes too late, and is not published in an accessible and attractive form.

There may be some foundation for this complaint. But it must be remembered that few of Her Majesty's representatives can be expected to possess special competence for reporting on technical questions relating to particular branches of industry. No person can enlighten British manufacturers on such special matters unless he has himself a practical knowledge of them, and has kept that practical knowledge up to the level of to-day's requirements. Taking the secretaries, and consular reports as a whole, they are equal in quality and superior in quantity to those prepared by the foreign representatives of any other European country or of the United States, and as good as can be looked for from persons few of whom possess special knowledge.

The suggestions made for the better promotion of British trade abroad by means of Her Majesty's representatives are as follows; I give not only those addressed to the foreign office by its correspondents, but such also of those made in Parliament or the press as have come to my knowledge:

1. The publication of a weekly commercial paper—somewhat analogous to the French "*Moniteur Officiel du Commerce*"—setting forth tariff changes, movements in foreign markets, foreign commercial legislation, port and harbor regulations, &c.

2. The establishment of an office in London—like the French "*Bureau de Commerce*"—where tariffs, circulars, items of commercial news, &c., can be referred to by the public, who may inspect and copy.

3. That sample and specimen rooms should be attached to the principal consulates abroad, where various classes of British manufactured goods would be on view, and that the expense of maintaining such rooms should be met by fees to be fixed by an order in council.

4. That commercial museums and exhibitions of manufactured goods be established in well-chosen manufacturing centers, and that floating museums or exhibitions should be sent to various ports with samples of British goods.

5. That foreign tariff changes and projected changes should be made known more rapidly than heretofore.

6. That Her Majesty's diplomatic and consular officers abroad should use their best efforts to place British subjects on a not less favorable footing than foreigners in search of concessions or other commercial enterprises.

7. That any such undertakings should be at once reported home by Her Majesty's representatives.

8. That consuls be chosen from men possessing commercial qualifications and technical knowledge.

9. That the names and addresses of consuls abroad, and their office hours, should be made public.

10. That trade reports should appear at fixed and stated intervals; that more details respecting wages, hours of labor, cost of living, &c., should be put in them.

11. That copies of these reports should at once be sent to trade journals. That samples of manufactured goods and of agricultural products be sent home with them.

12. That changes in the classification of goods for tariff purposes be noted, and the decisions of commercial tribunals.

13. That more commercial attachés be appointed to embassies and legations.

14. That consuls should assist in recovering debts, and recommend trustworthy lawyers and accountants.

15. That consuls should report what means other countries adopt to push their trade.

16. That naval officers should write trade reports.

17. That consuls, when at home on leave, should visit commercial centers, and acquire technical knowledge.

18. That they should answer inquiries regarding the stability of foreign business houses, and how far credit may safely be given them.

19. That commercial clerks (or *chanceliers*) should be appointed to all consulates.

20. That a department be constructed in the foreign office specially charged with the prompt collection, publication, and diffusion of important information concerning commercial and industrial affairs.

21. That the foreign office should send abroad advertisements, commercial newspapers, &c., to consuls to distribute or show.

22. That every consulate should keep a registry of persons who are willing to act as agents abroad for British traders.

23. That Her Majesty's consuls should act as quasi public prosecutors in cases of trade-mark or patent infringements, &c.

24. That native agents be more employed by merchants in China and elsewhere than at present.

25. That the commercial department of the foreign office be "assisted by a council of advice, which should be drafted from the representative ranks of chambers of commerce, and that it should be assimilated with a kindred department of the colonial office and India office."

26. That consuls should be placed in direct communication with chambers of commerce.

27. That consuls should cultivate a "closer personal touch" with traders in their district.

28. That consuls be allowed to buy and charge for such statistical information as they may be unable to procure otherwise, or not till too late a date.

Instead of examining in detail these suggestions, some of which are obviously useful, others obviously inapplicable, while many of them are acted on already, I shall state what seem to be the functions which the foreign office may properly instruct its agents abroad to discharge, and what kind of action, both at home and abroad, the foreign office and its agents may take without substantially increasing the present expenditure on the diplomatic and consular services. Some of the forms of action suggested would require a very considerable increase, but it is evidently the duty of the foreign office to await in such a matter the expression of the wish of Parliament.

These functions and forms of action fall under two heads: Those which relate to the conduct of Her Majesty's representatives in foreign countries for the promotion of British trade there, and those which relate to the action, both of them and of the foreign office, in the collection, transmission, and diffusion at home of information serviceable to the industrial and commercial classes of this country.

It must be remembered that most of what is in the following remarks described as desirable has been and is now done by the commercial department of the foreign office or by Her Majesty's agents abroad under their instructions. There are very few possible lines of action which the commercial department has not already opened up, so that further progress must be chiefly in improving some details, and in the maintenance of an unflinching interest and activity in commercial matters among those who serve the country.

#### *I.—As to the action in foreign countries of Her Majesty's representatives.*

1. Her Majesty's representatives and consuls ought to be at all times ready to afford orally or by letter the best information they possess to those British subjects who may apply for it, regarding the state of business in their respective districts, the openings for trade which exist, the new undertakings projected, the new industries started, the new lines of communication which are being opened, and (where they are in a position and feel at liberty to do so) the respectability of foreign commercial houses. Obviously, they can only speak to the best of their knowledge, information, and belief. They cannot be expected to incur expense and neglect their other duties for the purpose of procuring information for a private person, and if they venture to speak at all regarding the character of the firms as to which they may be questioned, they will have to speak guardedly, warning the questioner that they give no guarantee.

2. They ought to be prepared to introduce to persons or firms or Government officials in the districts where they reside such British subjects as come properly recommended. Here, too, there is much room for discretion as to the extent to which they may go in recommending a British merchant or his agent to a foreigner. In some cases they will merely state that he is a British subject who has brought a letter from some person of respectability, or from the foreign office, as the case may be. Very rarely would it be expedient that they should make themselves responsible for any person not traveling on an official mission.

3. They may properly recommend to British subjects having legal business competent and trustworthy legal advisers and accountants, and render to British litigants such advice and help as their own experience may show to be useful. In many countries the difficulty of knowing the law of the country, and of ascertaining how far it is fairly administered in cases where foreigners are concerned, is a serious hindrance to traders who may not be established there, but do their business through the post or by local agents. A consul cannot be expected to become a debt collector, but he may sometimes be able to keep or to hold a British merchant out of a peculiarly annoying source of loss.

4. They may intercede on behalf of British ships which have unintentionally infringed quarantine or customs regulations, and endeavor to obtain either exemption from any oppressive formality, or the remission of a fine imposed when there was no wrongful purpose on the part of the captain or freighter. Services of this kind are rendered every day, and are so much a matter of course that the commercial public at home hardly realize how essential they are, and how much of a consul's time they occupy in busy ports.

5. It has been suggested that consuls might regularly (as some now do occasionally) distribute the circulars of British trading firms, or might undertake the control of a show-room, to be placed at or near the consulate, in which British goods could be displayed. Apart from the additional labor which this would impose on a consul, to the disadvantage of his other duties, it must be observed that this would turn him into a sort of commercial agent, a character scarcely compatible with his position as representing a great State, and that it would be hard for him to show equal zeal in pushing the interests of the various firms who would seek to use him. Most of the commercial authorities whose opinion I have asked disapprove of the proposal.

6. The case of British subjects seeking to obtain contracts or concessions from foreign Governments presents special difficulties (adverted to above). It will, of course, be the duty of Her Majesty's representative to secure a fair hearing and full consideration for his countrymen, and to see that competitors belonging to other countries gain no advantage by the influence of their envoys. When exceptional pressure is being used by these envoys, it may be necessary for him to exert similar pressure, and to remind the Government of the country where he resides that the British Government will regard exceptional favor shown to the subjects of other powers as being a departure, amounting to a mark of unfriendliness to itself, from the safe rule of equal favor and open competition.

Such pressure, however, if justified by the circumstances of the case, would have to be employed under several conditions, viz:

That no preference should be sought for one of two or more British competitors *inter se*.

That no use of questionable means (*e. g.*, by the offering of benefits to the minister controlling the contract) should be connived at.

That, in the absence of special instructions from home, no guarantee should be given, nor the faith of Her Majesty's Government in any way pledged, on behalf of a person seeking a contract.

That, in the absence of such special instructions, no such action should be taken as would lay Her Majesty's Government under an obligation in respect of the favor shown to the British subject.

II.—*As to the obtaining and publishing of intelligence from abroad.*

Under this head three points have to be considered :

(A).—*The kind of information which the diplomatic or consular agent ought to collect.*

The existing instructions call the attention of the consuls to most of the topics on which British manufacturers and merchants may desire to be informed. Adding to these some others which have been suggested, we arrive at such a list as the following :

Information regarding labor, including rates of wages, hours of work, condition of work-people, trades-unions, strikes and lock-outs, systems of co-operation and profit-sharing. Such information will be specially valuable in view of the recent establishment by the Board of Trade of a labor bureau for the diffusion of intelligence on industrial topics.

Information regarding manufactures, notices of inventions, of the development of new branches of industry, of the transfer of capital from one manufacture to another, of new appliances in agriculture.

Information on the movements of trade, the increasing or declining demand for certain kinds of goods, changes in taste or in the habits of life of a people as affecting demand for imported articles.

Information on legislation, changes in customs regulations, tariffs, quarantine, and in the laws relating to commerce and industry.

Information relating to finance, banking, currency, public loans, and taxation.

Information relating to modes of communication and transport, railroads, lines of steamboats, rates of freight, directions in which traffic is beginning to flow.

Information as to the administration of the law, decisions on important commercial questions, regulations relating to law charges, changes in commercial procedure.

Information on undertakings and enterprises of moment, the construction of public works, the opening of mines, the granting of concessions for working minerals or forests, or for other similar purposes.

Information relating to technical and industrial education, and as to the functions assumed by the State in connection therewith.

Information relating to exhibitions, congresses, conferences, and other occasions on which traders meet or goods may be displayed.

Statistics of all kinds relating to commerce, shipping, and industry.

Returns of the names of British merchants and firms engaged in business within each consular district, and of the nature of the business in which they are engaged.

Of course no one can expect a diplomatic or consular officer to report on all these matters at once, even supposing him competent to do so. The list is given as suggesting points, sometimes one, sometimes another, of which many from month to month or year to year possess special importance, and therefore deserve to be reported on, whether by way of a concise statement of fact in a dispatch, or of a reasonable treatment in a comprehensive report.

It has been urged that a consul should also be required to send home samples of the goods most in vogue in the country where he lives, or specimens of its chief products, and of those especially which compete with British manufactures. In several instances consuls have already done this. Few, however, can possess the special knowledge of goods which would give value to their selection of samples. The expense of



procuring proper samples in sufficient quantity and of their conveyance to England is a further, though not a grave, difficulty, not to add that the commercial museums have not yet been established at trade centers where such samples could be advantageously displayed. Nevertheless, the experiment deserves to be tried, and instructions to this effect are now being drafted to consuls\* in the more remote parts of the world, who may properly be instructed to endeavor to procure patterns of at least some classes of the goods (say, for example, textile fabrics) chiefly in demand in their districts. These may be sent when received to the leading Chambers of Commerce, to be displayed in a manner calculated to bring them to the knowledge of the merchants and manufacturers interested. In Germany such collections of samples have lately been exhibited in several towns, and have stimulated the manufacturers to produce goods of the kind popular in the foreign markets whence the samples come.

Whether accompanied by samples or not, thorough and accurate reports on the topics above mentioned would obviously be valuable to British traders. Can such reports, however, be expected? Secretaries of legation and consuls have rarely any practical knowledge of commerce, still more rarely any special acquaintance with a particular line of commerce or branch of manufacture. Now, considering the increasing specialization of business as well as of science, it is plain that the observations of a man, however intelligent, devoid of special knowledge of any department, will not give the trader in that department all the information he needs. No manufacturer of textile goods could determine his production or his shipments upon the contents of a report written by a diplomatist or consul who had never made or dealt in textiles. Even if you suppose a consul to have "got up" cottons or woollens, he would not have got up hardware goods also; or, *vice versa*, if he understood the iron trade, he would not understand cotton goods. Moreover, each of our great branches of industry already does this work for itself, for in each there are a few leading firms which issue circulars and reports relating to the foreign trade in the particular branch—reports in which the sort of specific information is given which a merchant or manufacturer needs for his guidance. As is well observed by Mr. A. Provand in his memorandum (printed in the correspondence), these reports are different in their nature from those to be expected from consuls. But their existence makes it unnecessary for a consul to deal with the minutiae of a particular trade.

If merchants at home conceive that they need further data for their export business than what private trade circulars and reports now supply, either the diplomatic and consular services must be re-enforced by a large number of trade specialists—men who, if they have not failed in business themselves, will be obtainable only by the temptation of large salaries—or else the commercial classes must themselves provide for getting what they desire through a better system of agents sent out either by firms or by commercial bodies. The latter seems the simpler solution; and it deserves to be noted that several of the consuls who have replied to the foreign office circular ascribe the advantages lately gained by some foreign nations, especially the Germans, over English merchants to their larger use of commercial travelers, and the superior competence (in linguistic attainments and otherwise) of the travelers whom they employ. It is also observed that English houses, owing, apparently, to the difficulty of finding among their countrymen persons

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\* See Appendix B, page 84.

familiar with foreign tongues, are in the habit of employing foreigners as their commercial travelers. After a little these travelers set up for themselves, and thus connections which have been formed by the representatives of British firms are carried away into foreign hands, not to add that even while he is acting for a British firm a foreigner is more apt to give incidental help to one of his fellow-countrymen than to an Englishman.

I shall refer presently to a suggestion that has been made for meeting this want of special qualifications among the diplomatists, viz, the appointment of commercial attachés. Meanwhile it may be observed that the most we can expect from a consul preparing a report is that he should understand the laws, the social system, the commercial and industrial conditions of the country where he is placed, and that he should be careful to refer to the best sources, written or oral, for information on those matters which lie outside his own range of knowledge. He may thus produce reports which will be useful to the merchant or manufacturer at home, not, perhaps, as a maker of or dealer in any special class of goods, but as a mercantile man, who wishes to know the prospects of British trade generally in a given district.

It is true that a British consul is in one respect worse off than the consular officers of other nations. He has far heavier duties connected with shipping because our mercantile marine is much the largest in the world. In many ports the whole day is consumed in necessary routine work and little time left for researches into commercial questions. Nor is this disadvantage wholly compensated by the fact that he is brought into contact with an unusually large number of ship captains, brokers, underwriters, and importing firms. He meets these persons as an official, not as a merchant. The consuls of States are very frequently engaged in trade, and as traders learn much which the British consul, pressed by official duties, has neither the time nor the opportunities to pick up.

We should look in vain for men capable of discharging all the duties, political and social, literary and commercial, which the correspondents of the foreign office wish it to throw upon its consuls; and even had we discovered the men there would remain the difficulty of finding time for such multifarious work.

In seeking for information likely to be serviceable in his own country, a British representative may be both guided and stimulated by the communications he receives from home. It is already the practice of the foreign office to call for occasional reports on special subjects, and I conceive that in addition it might occasionally direct the attention of a secretary of legation or a consul to some particular topic, requesting him to be specially careful to send home from time to time such facts as he could collect bearing on it. In giving such directions the foreign office itself would naturally have regard to the suggestions made or requests preferred to it by mercantile authorities at home. Mr. Consul Brown observes, with truth, that many persons find it easier to report on a subject if one starts from a basis of questions drawn up by a competent person than it is to construct a wholly original report.

The practice of the American State Department is to require from many of its agents abroad reports at the same time upon the same branch of industry, and in this way a volume of interest to a particular trade is produced. But American consuls have far less work than our own, and are more frequently men of practical commercial experience taken out of commerce for four years and then sent back to it on the accession of a new President.

The question remains, what should be the respective parts of diplomatic and of consular officers in reporting on commercial subjects? Some of the mercantile persons and bodies that have addressed the foreign office seem to confound the functions of these two classes, yet they are sufficiently clearly distinguished. An ambassador, or minister, or secretary of embassy or legation ought to report on the commerce, or manufactures, or social conditions of a country as a whole. Statistics relating to these matters are usually published at the capital and for the whole country; it is mere waste of time to force a consul to repeat what can be better given from headquarters. Changes in the law, including changes in tariffs and quarantine regulations, are usually first announced at the capital, and apply to the whole of a State; it is, therefore, from a diplomatic agent that news on this subject should be expected. If he needs information from a port he can ask the consul for it before sending his dispatch home. When the matter to be investigated and reported on concerns a district in which no British consul is stationed—and it must be remembered that we have few consuls save in sea-ports—some one at the embassy or legation is usually fitter to deal with it than a consul, who may, perhaps, be less easily spared from his post, and is likely to have fewer facilities than the capital affords for procuring information. On the other hand, the consul stands at the point of import; he sees the goods entering and the merchants who take them; he can form a better opinion on many trade affairs than a secretary of legation, obliged to fulfill the social duties of a court city. Hence the consul is the person from whom to get not only the local statistics of his port and district, but remarks on the movements and tendencies of import trade, the reasons why other countries prevail in any particular line against British competition, and the effects of tariff changes upon trade, both as between various importing countries, *inter se*, and as between Great Britain and the home producers of the country where the consul is stationed. The effect of opening new lines of transportation, whether by sea or by land, is also a matter on which the consul is usually better able to report than the diplomatist at a capital.

Bearing this distinction of functions and opportunities in mind, it is clear that some of the duties which our merchants wish to throw on the consuls, *e. g.*, that of reporting changes made or likely to be made in tariffs, ought not to be placed on them; and I conceive that in revising the existing instructions, the respective duties of diplomatic representatives on the one hand, and of consuls on the other, might with advantage be more clearly defined. It is no less plain that, as each class is the complement of the other, efforts should be made to secure a due relation between their respective annual reports, and to publish these in the same series.

(B.)—*The transmission of intelligence from abroad.*

There are three points to be dealt with under this head, viz :  
Speed of transmission.

Regularity of transmission.

The intervals or periods at which transmission ought to take place.

The present practice is to require from every secretary of embassy or legation, and every paid consular officer, an annual report on the trade, commerce, and navigation of the country or district (as the case may be) in which he is stationed, and from every secretary of embassy or legation an annual report on its finance. Occasional reports on special subjects are sometimes called for, more frequently from embassies than

from consulates. Information on commercial or industrial topics is occasionally forwarded without being called for, more frequently from embassies than from consulates, and it takes sometimes the form of a short dispatch, sometimes of a regular report.

The defects in our present practice are:

(a) That the current intelligence (as it may be called) comes too slowly to be of much practical service.

This does not seem to be the fault of our representatives abroad. It is rather due to the fact that, as hitherto the only regular means of publishing information supplied to the foreign office has been through the annual reports, and diplomatists and consuls have reserved for these reports most of what they have to say about the trade of their districts. As this deficiency is now to be remedied (see next paragraph), I see no objection to, and much gain in, instructing both diplomatic and consular agents to transmit, with all possible speed, all such information as they can collect of present commercial value, leaving it to their discretion whether to send it as a short note in a dispatch, or in the form of a report (longer or shorter, as the case may require), and even empowering them, in urgent cases, to use the telegraphic wire. For commercial purposes, as well as in political negotiations, the briefest intimation in England of a new fact is often of more worth at the first possible moment after it has become known abroad than the fullest report a week later.

(b) That the annual reports come in irregularly, and often too late to be of practical utility.

Upon this it is to be observed that (as many of our consular correspondents point out) the annual reports have to wait for the trade statistics of the year, and these statistics are in many countries not published till six or even eight months after the expiry of the year. If a consul tries to get at the necessary statistics by private inquiry, or from the books of the local custom-house, he is obliged to spend much time and trouble, perhaps some expense, in obtaining the data whereon to ground his report. Thus, a report for one year is sometimes not ready for publication till late in the year succeeding; and remarks drawn from personal observation or inquiry, which would have been fresh, interesting, and valuable if published when they first occurred to the writer's mind in January, have become stale and profitless, because he has to wait until August for the statistics which are to accompany them.

This plea is a good one in many cases, but there are others in which it is unavailable. A reference to the list kept of the date of receipt of commercial reports shows that many have come in much too late, some so late as to be not worth publishing, while a few never come at all. Assuming reports to be desirable, the supervision exercised over their appearance ought to be stricter than heretofore. A dilatory consul ought to be more promptly recalled to a sense of his duties in the matter, a punctual and zealous consul to obtain ampler recognition of his assiduity. In cases where the report now waits on the tardy publication of foreign official statistics, it may sometimes be desirable to forward it separately at once, and the statistics later. Of course the quicker transmission and publication of short notes and current news generally will make delays in the appearance of the comprehensive report less harmful.

It has been suggested that quarterly instead of annual reports should be required. This would seem to impose too great a burden on consuls, already a hard-worked class, and the argument for it will be much weakened if the plan of obtaining and publishing frequent occasional notices

be adopted. Mr. Consul Crawford proposes that whereas now all consuls are instructed to report up to the 31st December for each year, they should be divided into four classes, and each class directed to report in a given quarter for the whole twelve months preceding. In any event, our aim should be to insure a greater regularity, as well as promptitude, than at present exists in the transmission of reports.

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### III.—*Miscellaneous suggestions.*

It remains to advert to some other suggestions which have been made for increasing the commercial utility of our services.

One is, the establishment of commercial museums, a matter discussed in an interesting memorandum by Mr. Kennedy, and Mr. Bateman of the Board of Trade, on the similar institutions in France, as also in a report recently received from Mr. Crowe at Paris, which will shortly be published. English commercial opinion is not quite unanimous on this subject. Most of our authorities conceive that such museums would be useful, but remark that they ought to be planted, not in the capital, but in such centers of industry as Manchester, Leeds, Sheffield, Birmingham, Nottingham, Glasgow, Dundee. Others observe that although collection of foreign patterns would help to show the tastes and tendencies in matters of design and color of consumers in foreign markets, British novelties would be less easy to procure, because manufacturers are jealous of letting their patterns come to the knowledge of their rivals. Nor is it clear that the State should bear the expense of such museums. They seem rather an enterprise proper to be undertaken by the chamber of commerce of a great town, or by an association of such chambers; although no doubt consuls ought to be encouraged or required to supply materials by sending home patterns and inventions as well as samples of foreign produce suitable for such a collection.

Much matter of interest to British traders is annually published in the official reports of the leading European States and of the United States. The suggestion that extracts from these reports should be collected and officially published here is a good one, but one which it does not seem the special province of the foreign office to carry out, although, of course, it is through our diplomatic agents that these documents might be most readily procured.

Still more weight has been laid upon the suggestion that there should be added to the diplomatic service a new class of persons specially trained for and charged with the duty of promoting British commercial interests. It was even proposed in the House of Commons last session that a commercial attaché should be appointed at every foreign capital where Her Majesty is represented. Not to speak of the expense which this would involve, it may be doubted whether a commercial attaché would at most capitals find enough work to occupy him, or whether, by any exertions he might put forth, he could render much further help to British manufacturers and merchants than they now obtain through the press and private channels of information. His presence would be an excuse for the neglect of commercial affairs by the rest of the embassy; there would be little promotion for him; nor would it be easy to secure, except by a large salary, capable men for a post so much out of the line of the regular service. Only a person of large commercial knowledge, judgment, and experience would be worth having, and such a person would be almost certain to prefer a private commercial career to the prospect which this special branch of diplomacy would hold out.

If such a class of officials are needed, it is not necessarily in capitals that they would be most serviceable; but the view that they are generally needed seems anyhow to rest on a wholly exaggerated estimate of the services which diplomatic representatives can render to private traders.

More may be hoped from stimulating the interest of our present diplomatic and consular officers in commercial affairs, and from giving them both a stronger motive and better facilities for activity in this department of their duties. There will always be among our diplomatists some men with a special turn for mastering commercial subjects. Such men might be encouraged to prosecute inquiries into these subjects, and be selected by preference for posts where proficiency in them was likely to be valuable. As regards the consular branch, even if it be not turned into a regular service similar to the diplomatic, a question too large to be discussed here, something more than has yet been attempted might be done to develop its aptitudes in this direction. Special regard might be had, in the appointment of consuls, to their capacity for commercial work. Opportunities might be given to consuls of obtaining the sort of knowledge which would help them, as, for instance, by extending their acquaintance with mercantile law and the methods of commerce, or by visiting some of the chief seats of British manufacturing industry. Promotion to a higher post might be influenced by the tact and zeal a consul had shown in helping English trade, and by the mastery of commercial questions displayed in his reports. He should be encouraged to communicate more frequently with the foreign office on these topics, and similarly the commercial department of the office might become to a larger extent than at present the means of conveying to our representatives the wishes and inquiries of the mercantile community at home. It is not easy to specify the precise forms which this kind of intercommunication would take, nor would it be prudent to anticipate large new results from it; all I suggest is that more might be done than is now done to focus, by means of the foreign office, the ideas and desires of those who in England are employed in foreign trade, and to radiate, so to speak, these ideas from home over all those places wherein help is sought or whence information is required.

It does not, however, follow that the notion which lies at the bottom of the proposal to appoint commercial attachés is an unfruitful one. We in England have much to learn from other countries, not only as respects the methods by which they conduct their industries and their commerce, but also as regards their legislation, the condition of the masses of their people, the various means by which they deal with those social and educational problems which confront all great modern States. Any one who has been accustomed to travel on the continent of Europe or in North America is daily struck by the number of points in which the experience of other countries throws light on our difficulties—sometimes in the way of suggestion, sometimes in that of warning—and is led to desire that a more constant and systematic means existed than we now possess of obtaining and rendering available, for the benefit of Britain and her colonies, the results of that experience. Of late years much has been done to procure such data, both by sending out occasional commissioners to inquire on specific subjects, and by requiring special reports from Her Majesty's representatives in foreign countries. We have a commercial attaché at Paris, whose reports on trade and industrial questions are excellent, and who should be frequently instructed to report on these questions as they arise in different parts of France.

But our diplomatic representatives (even supposing that they could quit their posts to travel when required) are not always qualified by their knowledge, by their literary skill, or by the possession of a keenly observant mind, to obtain the right sort of information, or to present it in effective form. There would be ample occupation for two or three men of exceptional aptitude in going from place to place to report upon subjects belonging to what may be called the realm of economic and social progress. One might be kept busy in the United States, where the diversity of laws and the continual development of new branches of industry furnishes an almost boundless field for instructive inquiry; two more in the continent of Europe, with most of whose States we have frequent negotiations on commercial questions, in which a knowledge of their commercial condition becomes important.

Although commerce and manufactures would afford the most frequent occasions for reports, one might suggest a great number of other topics to which the inquiries of such roving commissioners might be from time to time directed. Here are a few:

The action of the state in promoting the development of agriculture.

The action of the state in promoting commerce (*e. g.*, ministry of commerce).

Systems of banking.

Methods of commercial education.

Technical schools and institutions.

Trade societies and the laws regulating them.

Strikes and disturbances thence resulting (*e. g.*, Belgium, Decazeville, St. Louis).

Methods of out-door poor relief.

Methods of supplying hospital accommodation.

Sanitary authorities and regulations.

Co operation among workmen.

Profit-sharing enterprises.

Dwellings of the poor, and the action of municipal authorities regarding them.

Liability of employers for accidents to work-people.

Tribunals of commerce.

Systems of commercial arbitration.

Patent laws and the encouragement of inventors.

Copyright laws.

Laws relating to bankruptcy.

Influence of tariffs on production.

The effects of bounties on production.

Schools of opinion on financial and tariff questions.

Legal protection to homesteads.

Systems of house tenure in cities.

Laws relating to corporations and companies.

Limited liability of shareholders.

Laws relating to the sale of intoxicants.

Regulation by law or control by public authorities of public undertakings (*e. g.*, water, gas, electric lighting) and their economic effects.

Modes of land transfer and land registry.

Regulation of railways by law.

Working of railways by the state.

Systems of local rural government.

Systems of municipal government.

Methods of dealing with ecclesiastical endowments.

Methods of selecting candidates for public employment.

Development of fisheries.

State management of forests.

New branches of manufacture started in foreign countries.

It would be easy to suggest many other subjects, especially if the sphere of law proper were to be included, or that of science proper (*e. g.*, medical science or scientific inventions). The above touch on those matters which an inquirer may deal with on their social and economic side without minute special knowledge.

### *Summary of results.*

I may conclude by recapitulating briefly the conclusions to which the communications received by the foreign office and the foregoing examination of their contents seem to point.

The foreign office may seek to continue to be itself useful, and to utilize the services of those who act under its instructions abroad in the following directions :

Increased activity by diplomatists and consuls in affording information and help to Englishmen seeking to do business abroad.

Action (firm but cautious) by diplomatists in remote countries in counteracting the pressure used by the representatives of other States to push the mercantile interests of their countrymen.

More precise definition of respective duties of diplomatists and consuls in procuring information.

Prompter transmission of current commercial news from abroad.

More regular transmission of annual reports.

Better arrangement and prompter publication of reports.

Publication in a special journal of current commercial foreign news.

Sending home of samples of goods and of foreign products for exhibition in commercial museums (when established) or otherwise.

Greater encouragement to members of diplomatic and consular services to master commercial questions, and better facilities therefor.

Appointment of two or three qualified persons to be sent abroad to report upon commercial and industrial questions of immediate interest.

I conceive that circulars may properly be issued to Her Majesty's diplomatic representatives and consuls, conveying to them the substance of the suggestions with regard to their duties, and impressing upon them the value attached by the foreign office to the rendering by them of all such services as they properly can render to British commerce, assuring them also that the foreign office itself will not cease to guide and assist all their efforts in this direction, by turning to the most prompt and efficient account such materials as they can supply, and rendering itself a more and more perfect channel of communication between them and the commercial community at home.

Considering that in most of the specific directions above indicated something is being done already, and in several nearly as much as can be done, the above suggestions may appear disappointing to persons who have been expecting great results from state action in the promotion of our foreign trade. That those who are suffering from the existing depression should look wistfully to the Government for help is not surprising. Under the changed conditions of the world, with telegraphs and lines of steamers everywhere, with some large markets closed by protective tariffs, with native dealers supplanting the old system under which British mercantile houses did business through their branches abroad, the competition to which our commerce is exposed is far more severe than at any previous time. We must face this, perceiving that



it was impossible under these changed conditions to retain the sort of monopoly which we practically enjoyed in many parts of the globe, and comforting ourselves with the knowledge that we are still far ahead of any other people.

But we must also admit that if our rivals have in some directions gained on us, this has been partly due to our own shortcomings. As we have neglected the technical training of our artisans, so we have done little to prepare by an appropriate education our young men for the career of commerce. There is no denying that the youths who go from Germany or Belgium to push their fortunes abroad in trade go better equipped than are our own in knowledge of languages and of the methods of business. They are willing to live more plainly than Englishmen will do, to work for smaller profits, to allow themselves fewer amusements. If they have less dash and enterprise than our countrymen, they have a steady tenacity and habits of systematic application not less valuable in the long run. They are more alive to the results attainable by attention to minutiae, and perhaps more keenly watchful of all such new facilities as the progress of science affords. Some of these disadvantages we may remove when once their existence has been realized; and it is rather by their removal than by any action on the part of Government that the maintenance of our commercial supremacy must be sought. The fabric of British trade was built up by the energy and self-reliance of individual men; it is the same qualities, supplemented by the knowledge and the training which have now become necessary, that are needed to maintain it.

Not the less, however, is it the clear and constant duty of the Government, which holds in its hands the threads of a vast organization stretching over the world, to do all that it legitimately can to further the interests of our commerce.

This is not likely to be forgotten by the foreign office, which has the best reason to know how wide is the range of our commercial relations, and how much strength and influence they give us. Manufacturing industry at home and commerce abroad are, and seem likely long to remain, the chief sources of our prosperity; the chief means by which this little country holds her splendid place in the world and has become the most potent of its civilizing forces.

JAMES BRYCE.

FOREIGN OFFICE, *July 17, 1886.*

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No. 2.

*Mr. Bryce to Mr. Calcraft.*

FOREIGN OFFICE, *July 27, 1886.*

SIR: The board of trade are doubtless aware that, with the view of ascertaining what further assistance can be rendered by Her Majesty's diplomatic and consular officers abroad to British subjects engaged in trade, it was thought desirable to invite suggestions from various commercial bodies in this country to guide Her Majesty's Government in dealing with this delicate and difficult subject.

The correspondence, which, by the desire of the secretary of state, I inclose herewith, embodies the recommendations which have been received in reply, with comments from some of the most experienced con-

sular officers. Together with the correspondence you will find a memorandum which I have drawn up on the subject.\* I also subjoin the draft of a letter which, with the board's concurrence, it is proposed to address to chambers of commerce and other commercial bodies who have been in communication with this department upon the subject.†

I am directed to say that Lord Rosebery will be glad to learn, at their earliest convenience, the opinion of the board on the views and suggestions contained in these papers.

I am, &c.,

J. BRYCE.

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No. 3.

*Mr. Calcraft to Mr. Bryce.*—(Received July 30.)

BOARD OF TRADE, LONDON, *July 30, 1886.*

SIR: I am directed by the board of trade to acknowledge the receipt of your two letters of the 28th instant relating, respectively, to the trade journal proposed to be issued by this department and to the general question of the assistance that Government can render to British trade abroad, respecting which you inclose copies of recent correspondence and of a memorandum which you have written upon the subject, together with the draft of a circular which the Earl of Rosebery proposes to issue to the chambers of commerce upon these subjects.

Before proceeding to offer the observations of the board of trade on the views and suggestions contained in these papers, and especially in the proposed circular, in accordance with Lord Rosebery's request, I am to acknowledge with special thanks the valuable co-operation which has been received from the foreign office in matters relating to trade during Lord Rosebery's term of office.

With regard to the proposed trade journal, I am to request that you will thank Lord Rosebery for the help promised by the foreign office in your letter, in the way of supplying information, and also in advising what can be usefully published.

Turning to the draft letter to the chambers of commerce, the board of trade would make the following observations *seriatim* upon the suggestions contained therein:

1. The board of trade quite concur in Lord Rosebery's opinion on this matter. The new trade journal is about to be issued by this board, as being the department which possesses all the available information respecting trade at home and abroad, and the board trust that this publication will contain not only notices of tariff changes and general commercial legislation, but will also treat of home and foreign trade generally.

2. The board of trade are disposed to think that the patent office library might be utilized so as to be available to the public for consulting tariffs and blue books; but this is a matter which will require further careful consideration.

3. The board of trade agree with the foreign office that it would be impracticable for consuls to combine the charge of these show-rooms with their other duties.

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\* No. 1, *ante*.

† See No. 4, p. 23.

They are aware that United States consuls occasionally exhibit specimens of American ware at their consulates; but it must be remembered that American export trade is much more limited in quantity and variety than British, and it would be manifestly impossible when, as in this country, there are about 3,000 branches of manufactures, to represent adequately the variety of products in the way proposed.

4. The board of trade agree with Lord Rosebery both as to the expediency of the museums being kept up by the commercial communities, and assisted by Her Majesty's officers by the supply of specimens. There is no doubt as to the advantage of such museums, and as to the valuable aid which consuls could render in furnishing specimens.

5. The board of trade propose to publish in the journal notices of projected as well as actual tariff changes, as they see no inconvenience in doing so if the stage of the bill or project is clearly stated. It is often of great importance to merchants and manufacturers to have the information of approaching changes.

6 and 7. The board of trade concur with foreign office, and in (8) also. The ministerial and judicial duties of consuls are of great importance. They think, moreover, that it is desirable to offer special encouragement to such of Her Majesty's representatives abroad as furnish reports best calculated to give useful information to the commercial community.

9. The board of trade agree to.

10. Is connected with the publication of the journal. If this document, which is now proposed to be published monthly or oftener, should, as the board of trade hope, come to be a weekly publication, abstracts or short reports of Her Majesty's officers abroad will reach the public very quickly in this way.

11. This board agree with the foreign office. They are likely to make heavier demands on the foreign office in this respect in connection with the new labor bureau.

12. The board of trade agree with foreign office.

13. The board propose to publish changes of classification in the journal, as these are often quite as important as changes in the tariffs themselves.

14. Is a matter which concerns foreign office more than board of trade.

15 to 17. The board of trade concur generally with foreign office.

18. The board of trade are strongly of opinion that this is not a matter on which Her Majesty's representatives should express any opinion.

19. This must be considered in conjunction with the size and scope of the new journal as a compendium of trade information.

20. The board of trade quite agree with foreign office, that the consuls should take no part in litigation in these cases.

21. The board of trade consider that it might often be useful to have a list of special firms engaged in leading industries who should be consulted by the commercial departments of the two offices whenever required, and they cannot recommend too strongly the expediency of close personal communication between the two departments themselves whenever any commercial arrangement is contemplated.

22. Besides the reasons given by the foreign office, with which this board agree, they consider that direct communication between the consuls and the chambers of commerce would often involve the foreign office and board of trade in very serious complications.

23 and 24. The board of trade agree with foreign office.

In conclusion, the board of trade desire me to express a hope that the efforts now being made by the various departments of Her Majesty's Government to assist trade in every legitimate way may meet with suc-

cess and receive the hearty approval and co-operation of the commercial and industrial communities, on whom the prosperity and welfare of this country so largely depend.

I have, &c.,

HENRY G. CALCRAFT.

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No. 4.

*Letter addressed by Mr. Bryce to chambers of commerce and commercial associations of the United Kingdom.*

FOREIGN OFFICE, July 31, 1886.

SIR: I am directed by the Earl of Rosebery to acquaint you that [\*since the date of my former communication to you of the 4th March last] Her Majesty's Government have given their most careful and earnest consideration to the question of the further assistance which Her Majesty's diplomatic and consular officers can properly render to British subjects engaged in foreign trade.

With this object in view, Lord Rosebery directed that a selection of the more important suggestions that had at various times been made to him should be submitted for the observations of those of Her Majesty's consuls who resided at posts where it was considered that the best opportunities existed for forming a valuable opinion.

Their replies will be found in the printed correspondence which I am now directed to inclose for your information, together with other correspondence relating to the same subject.

Lord Rosebery has little doubt but that the statements of facts made in these answers, as well as the general consensus of opinion which pervades them, will satisfy the chambers of commerce of the United Kingdom that both Her Majesty's diplomatic and consular representatives have striven in the past to promote the commercial interests of their countrymen abroad; and that what is now chiefly needed to secure their fuller co-operation in any new direction, and stimulate their action generally, is some clear indication of the lines on which they can properly act consistently with their own position and the dignity of the country whose accredited agents they are.

It may, therefore, be most convenient in the first place to summarize the most important suggestions which have already proceeded from yourselves and others, and, by dealing with each one separately, to endeavor to show how far they are capable of being put into execution.

1. *The publication of an official commercial paper, setting forth tariff changes, movements in foreign markets, foreign commercial legislation, port and harbor regulations, &c.*

Lord Rosebery understands that it is the intention of the board of trade shortly to issue a periodical of the nature proposed.

To be of real value such a journal should, in his lordship's opinion, embrace items of interest relating not only to foreign, but also to colonial and Indian trade. Such being the case, it is obvious that the work could not have been satisfactorily undertaken by the foreign office alone, though that office may supply a large part of the materials to be used in it; and it appears to be most convenient that the board of trade, to

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\* To the Association of Chambers of Commerce and others mentioned in foot-note to No. 22 (Part 1) only.

whom all available information relating to manufactures and commerce is referred by the other departments, should undertake the publication of this journal.

2. *The establishment of an office in London where tariffs, circulars, items of commercial news, &c., can be referred to by the public, who may inspect and copy.*

This suggestion is one upon which it hardly comes within the province of the foreign office to pronounce an opinion, and it will be necessary to consider, if it be adopted, whether effect should be given to it by the Government, or whether the commercial community should not themselves take the initiative in creating such an institution. Lord Rosebery can, however, assure you that the foreign office will, at all times, be ready to afford such assistance as it can to insure the successful working of such a center of information.

3. *That sample and specimen rooms should be attached to the principal consulates abroad, where various classes of British manufactured goods might be kept on view, and that the expense of maintaining such sample rooms should be met by fees to be fixed by an order in council.*

This, again, is a proposal which would require much careful consideration, for it would not only largely increase the work of our consuls, but might tend to put them in the position of commercial agents—a position inconsistent with their official duties. Although consuls might, without impropriety, give their advice and countenance to the establishment of sample-rooms, the maintenance and management of such rooms, whether at home or abroad, would rather seem to devolve primarily on the commercial community, which, through chambers of commerce or other bodies possessing special knowledge, could best manage them.

4. *That commercial museums of foreign manufactured goods and products be established in well-chosen centers in the United Kingdom, as also exhibitions of British goods to be opened at foreign ports, or sent in vessels from place to place.*

The last preceding observations apply to this suggestion with equal force. The cost of such museums or exhibitions ought, it is conceived, to be borne by those for whose benefit they are created, but Her Majesty's officers abroad would be instructed to do everything in their power to procure materials for exhibition therein.

5. *That changes in foreign tariffs should be made known more rapidly than heretofore, and that projected changes should be promptly reported.*

The existing instructions have for years past provided for this, so far as concerns the transmission home of a change actually made. It is not generally the duty of the consul, but rather of the ambassador or minister at the capital where the information is promulgated, to transmit it immediately.

As to "projected changes," Lord Rosebery conceives that great caution would be needed in publishing officially any information that does not record accomplished facts, as he considers that if a minister were to report a projected tariff change, believing it likely to be effected, and such change were, for some cause or other, never carried out, after having been publicly announced in this country as probable, great inconvenience might be occasioned to persons interested. As regards the prompter dissemination at home of intelligence of change actually made, the matter is receiving attention, and the Board of Trade periodical publication already referred to will afford a convenient channel of communication for the purpose.

6. *That Her Majesty's diplomatic and consular officers abroad should use their best efforts to place British subjects on a not less favorable footing than foreigners in search of concessions or other commercial enterprises.*

With regard to this matter, you may refer to the printed correspondence inclosed, from which it will be seen that instructions in this sense have already been sent to Her Majesty's diplomatic representatives abroad. The dispatches from Sir R. Morier, Sir E. Thornton, and Sir E. Monson, of the 22d April, 1st May, and 8th January, respectively, have, however, an important bearing on this question. They show the limitations which must be imposed on diplomatic action of this nature, and Lord Rosebery believes that the force of their observations cannot fail to be appreciated.

7. *That any such enterprises should be at once reported home by Her Majesty's representatives.*

Instructions in this sense have already been issued.

8. *That consuls be chosen from men possessing commercial qualifications and technical knowledge, and that commercial clerks should be appointed to all consulates.*

This is a matter that requires, and is entitled to receive, further and careful consideration, as does any other practical proposal for increasing the efficiency in commercial matters of the consular service; but it must be borne in mind that the duties and qualifications required of consuls are both numerous and varied, and that commercial matters constitute a part only of their work.

With regard to the appointment of commercial clerks, it must be remembered that the consuls have to select their own clerks and have to pay them out of their office allowances. Many, no doubt, do employ commercial clerks, but to insist upon their all doing so would lead to a very large increase of expense.

9. *That the names and addresses of consuls abroad and their office hours should be made public.*

Information respecting the above is to be found in the foreign office list and the official directories; and the attention of Her Majesty's consuls shall be called to the point, in order that full publicity on the spot may be secured.

10. *That trade reports should appear more frequently and regularly, and that copies of them should be sent to trade journals.*

Trade reports will in future be published separately as soon as they have been received, and all possible promptitude will be used in obtaining them. They are sent as soon as they appear to chambers of commerce and the leading newspapers.

11. *That diplomatic and consular reports should give fuller details on the industry and the condition of the working classes.*

Increasing attention has been of late years paid in official reports to these subjects, and the importance of procuring full information regarding them will not be lost sight of.

12. *That samples of goods be sent home with the reports.*

Instructions have already been sent abroad to many of Her Majesty's consuls to forward samples of the manufactured goods chiefly in demand in the countries where they reside.

13. *That changes of classification of goods be noted, and decisions of commercial tribunals reported.*

This is already done, but the attention of consuls shall again be called to the point.

14. *That commercial attachés be appointed to embassies and legations.*

This suggestion was fully discussed in a debate in the House of Commons last session. Its adoption would involve considerable expense, and until more powerful reasons can be shown than those hitherto adduced on behalf of such a proposal, the secretary of state cannot pro-

nounce in its favor. You will find the arguments respecting it considered in a memorandum which will be printed in the papers to be laid before Parliament.

15. *That consuls should assist in recovering debts, and recommend trustworthy lawyers and accountants.*

Consuls frequently give such assistance as far as their position permits, but, as their support is very apt to be asked for unjust or fictitious claims, no general instruction can be given on the subject. Moreover, their interference in litigation is obviously a matter of much delicacy.

16. *That consuls should report what means other countries adopt to push their trade.*

This they already do, and will no doubt continue to do.

17. *That consuls, when at home on leave, should visit centers of British manufacture and acquire technical knowledge.*

This suggestion has already been acted upon in several cases, and consuls will be encouraged, in certain cases, to pay such visits. At the same time it is fair to bear in mind that a consul's leave is his holiday, and it would not be reasonable to insist upon his devoting his leisure to work of this nature. If such a practice were made generally obligatory, questions would arise regarding the extension of consular leave and the incurring of considerable additional expenditure, neither of which courses the secretary of state, as at present advised, is satisfied it would be politic to adopt.

18. *That they should report on the solvency of foreign business houses, and how far credit may safely be given.*

Lord Rosebery sees great difficulty in the practical application of this suggestion, for reasons which must be obvious to all business men.

Such a course might open a door to all kinds of misapprehension, complaint, and possibly even litigation, and is one which cannot properly be made the subject of any general direction.

19. *That a special department of the foreign office be charged with the prompt collection, publication, and diffusion of important information concerning commercial and industrial affairs.*

These duties, so far as they fall within the sphere of the foreign office, are already discharged, and, it is believed, in a manner satisfactory to the commercial community, by its commercial department. The new arrangements which are now being made for the better arrangement and speedier publication of reports, taken in conjunction with the periodical about to be issued by the Board of Trade, will (it is hoped) have the effect of giving effect to the wishes expressed for a somewhat prompter publication of commercial intelligence.

20. *That Her Majesty's consuls should act as quasi public prosecutors in cases of trade-mark infringement, &c.*

This duty is one which, in Lord Rosebery's opinion, could not be properly assigned to Her Majesty's consuls, being, as it is, essentially the work of not only a lawyer, but a lawyer possessed of special technical knowledge of such matters. Consular officers could not be expected to execute the function with satisfaction either to themselves or to those whose interests they might be attempting to represent.

21. *That the commercial department of foreign office be assisted by a council of advice, to be composed of persons chosen from the chambers of commerce, and that it should work in co-operation with a similar department in the colonial and India offices.*

It is already the practice of the commercial department of the foreign office to consult chambers of commerce and other commercial bodies on matters in which their opinion may be of value or assistance. It would

not add to the freedom or facility of these communications to add a further organization to the public offices indicated.

22. *That consuls should be placed in direct communication with chambers of commerce.*

This would overtax the consuls, who could not keep up two or more sets of communications. Such inquiries can be, and are, conducted through the foreign office with, it is believed, general satisfaction to the interests concerned.

23. *That consuls should cultivate a "closer personal touch" with traders in their district.*

This suggestion is too vague to be capable of embodiment in specific instructions, but the foreign office has every reason to believe that the general wish of consular officers is to be in close and cordial relations with the British commercial community in which they are placed. Such has long been the spirit of the instructions they have received from the department.

24. *That consuls be allowed to pay for early statistical information.*

It is not possible to lay down any general rule upon this subject, but each application will, as hitherto, be considered upon its merits, with due regard to economy. In some cases the expenditure may properly be allowed, but it is obvious that if a general authority were given to Her Majesty's consuls to purchase statistics at the public expense, a very heavy annual expenditure might be incurred, over which it would be difficult to exercise any control.

In addition to the above suggestions, the shipping community have urged the earlier communication of quarantine intelligence, and arrangements have accordingly been made\* for the more prompt transmission home of foreign quarantine regulations and restrictions, and for their daily transmission through the board of trade to Lloyd's and to the Mercantile and Shipping Gazette. By this means the insufficient publicity which has been thought to arise from the fact that such notices have hitherto been published only twice a week in the London Gazette will for the future be avoided.

Various charges have also been directed to be carried out in the publication and classification of the reports issued by the foreign office, which will, it is hoped, render them more generally useful to the commercial community, and secure from the public a larger and fuller appreciation of their substantial merits.

The above observations, as well as the correspondence sent herewith to you, and the memorandum and other papers which will shortly be published, will, Lord Rosebery trusts, lead you to recognize that his lordship has gone as far as he properly can at present with a view to carrying into effect such of the proposals submitted to him as are practicable and reasonable. Some of them have been already anticipated by existing instructions, while as regards those which do not appear capable of adoption at present, he feels satisfied that the reasons given above will suffice to show why they are not deemed feasible.

It is not within the province of this letter to discuss how far British merchants and manufacturers can assist themselves in the development of their trade with foreign countries; and it is obviously impossible for a government to take the place of individuals and undertake work which should properly be left to, and can better be discharged by, private enterprise. Her Majesty's Government can only to the best of their power carry out the plans which occur to or are brought before them by which British agents in foreign countries can legitimately

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\* See Appendix A, p. 83.



assist British traders. They are fully prepared to do so, both by the selection of the most competent men as their officers, and by instructing and encouraging them to lose no opportunity of reporting intelligence of value, of assisting by information and advice their countrymen abroad, and of suggesting means by which in their opinion British trade can be promoted. Much has already been done in this direction, and if more can be done, this can be effected only by the active co-operation and assistance of the commercial community, who have the best means of knowing in what form the help they desire can best be given.

All practical suggestions will be welcome, and every effort will be made to turn them to account. But it must be remembered that official action has its legitimate sphere, that there are kinds of assistance which, however beneficial they might prove to individual traders, cannot be given by public officers without risk, not only to their own character and position, but even to the dignity of the Government they serve.

It must also be remembered that every addition to a consul's duties, and every report compiled, posted, and published, causes an increase of expenses which have to be defrayed from public funds; and that it is the duty of the secretary of state to take care that no serious permanent increase is made to the estimates except in accordance with the deliberate desire of Parliament, and to maintain a clear distinction between what are essentially public and merely private interests.

I have only in conclusion to add that Lord Rosebery is confident that by the full discussion and consideration which the matter has now received the energies of Her Majesty's agents abroad will be still further stimulated, while the steps now taken by this department, and to which I have already referred, will tend to the permanent benefit of British trade.

I am, &c.

J. BRYCE.

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No. 5.

*Circular addressed by the Earl of Rosebery to Her Majesty's representatives abroad.*

FOREIGN OFFICE, July 31, 1886.

SIR: You are doubtless aware, from the frequent discussions which have lately taken place, that the question as to what further assistance, if any, can be rendered by Her Majesty's diplomatic and consular officers abroad to British subjects engaged in trade, and to commercial enterprise generally, has for some time past been engaging the earnest consideration of Her Majesty's Government.

In the spring of the present year various representations were addressed to this office by persons interested in the question, but in order the more fully to elicit the views entertained by the commercial classes on so important a question, I directed that a letter should be addressed to the association of chambers of commerce, as well as to other leading chambers not incorporated with the association, inviting them to submit any practical suggestions they might think fit to offer. Their replies, together with the earlier representations referred to, will be found under the headings I and IV of the printed correspondence inclosed.

It will be seen that most of these recommendations were directed to the manner in which the consular corps, more particularly, might render

greater assistance than hitherto to British merchants. I accordingly gave directions that a selection of these proposals should be forwarded to the consular officers resident at the ports where the best opportunities exist for forming a sound opinion, in order that they might submit any remarks they had to offer on the possibility of carrying them into practical effect. Their replies, in which I may observe that there exists a remarkable unanimity of opinion on the chief questions of principle involved, will also be found in the printed correspondence.

I have to call your attention to the memorandum which has been drawn up by Mr. Bryce, and which deals with the various representations which have been made on this subject.

Lastly, I inclose, for your information, a copy of a circular letter that has been addressed to the commercial bodies whose suggestions were invited, and of the correspondence which has passed between this department and the board of trade. This letter will place clearly before you the views of Her Majesty's Government on these questions, and on the practicability of the plans proposed. They are indeed anxious that every assistance that British traders can reasonably ask for should be rendered to them by Her Majesty's diplomatic and consular agents. They observe with pleasure, but without surprise, from this correspondence, that members of both services displayed the greatest readiness to afford their hearty co operation in attaining the object in view. All that is therefore needed is a continued activity, not only in pursuing the methods hitherto adopted, but in discovering any others that can legitimately be employed.

It is obvious that a matter of such importance cannot be deemed to have been finally disposed of during the comparatively brief consideration that Her Majesty's Government have been able to bestow upon it. Action must, moreover, be manifestly regulated by considerations of time and place. It is, therefore, not merely difficult but inexpedient to attempt to lay down hard and fast rules for handling such questions. You will, however, find sufficient indication of what it is possible and expedient to do at once, as well as of the views of Her Majesty's Government on the whole question, in the memorandum and correspondence herewith inclosed. The principles there stated are, it is believed, those on which the diplomatic and consular action in commercial matters of this country has generally proceeded; and you will, in following those lines, be able to dispel any misapprehensions that have existed among the mercantile community as to what is being done and can be done by members of your service for their benefit. They will, it is hoped, be satisfied, by what has been said and by the directions given, that there exists an earnest desire on the part of Her Majesty's Government to accord to British enterprise all the assistance it can properly receive, and that nothing will be wanting on your part to carry out this purpose with zeal and judgment.

I am, &c.,

ROSEBERRY.

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No. 6.

*Circular address by the Earl of Rosebery to Her Majesty's consuls.*

FOREIGN OFFICE, July 31, 1886.

SIR: You are doubtless aware, from the frequent discussions which have lately taken place, that the question as to what further assistance, if any, can be rendered by Her Majesty's diplomatic and consular officers

abroad to British subjects engaged in trade, and to commercial enterprise generally, has for some time been engaging the earnest consideration of Her Majesty's Government. In the spring of the present year various representations were addressed to this office by persons interested in the question; but in order the more fully to elicit the views entertained by the commercial classes on so important a question, Lord Rosebery directed that a letter should be addressed to the association of chambers of commerce, as well as to other leading chambers not incorporated with the association, inviting them to submit any practical suggestions they might think fit to offer. Their replies, together with the earlier representations referred to, will be found in the printed correspondence inclosed.

A selection of the representations received was forwarded to the consular officers resident at the posts where the best opportunities existed for forming a sound opinion, in order that they might submit any remarks they had to offer on the possibility of giving practical effect to these suggestions. Their replies, together with the earlier representations referred to, will be found under the headings I and IV of the printed correspondence.

I am directed by Lord Rosebery to call your attention to a memorandum which I have prepared, and which deals with the nature of the complaints made respecting and the means which have been suggested for the improvement of the existing practice, and also to draw your attention to the circular letter to the association of chambers of commerce and other commercial bodies, and to the correspondence which passed between this department and the board of trade on the subject. This circular letter will place before you clearly and categorically the views of Her Majesty's Government respecting the extent to which the various suggestions that have been submitted to them can be adopted. I may call your attention in particular to what is said in that letter with reference to the suggestions numbered 3, 5, 7, 9, 11, 13, 16, and 23.

You will gather from this correspondence that the board of trade concur in a suggestion which was made on behalf of this Office by myself at the annual meeting of the associated chambers of commerce in February last, and have determined to publish monthly an official commercial paper. It is not contemplated that this publication should in any way interfere with the annual trade report, which it is at present part of your duty to prepare, but it is very desirable that items of commercial interest, in the form of short notes, should be from time to time forwarded by you to this office in dispatches. Such information could be conveniently disseminated by means of this new periodical, and with greater rapidity than if it were held back till all the material necessary for the annual report were available. There is no reason why such information should not, however, be ultimately incorporated in your annual report.

Among such items you will, of course, continue to mention, as directed by the existing instructions, any contracts or concessions for which British subjects may compete with hope of success.

With regard to your annual trade reports, Lord Rosebery feels confident that you will recognize the importance of preparing them at as early a date as possible after the termination of the period on which you are reporting. His lordship is well aware of the difficulties which Her Majesty's consuls, in certain countries, experience in consequence of the delay in the publication of official statistics. In many cases it may be better to report without awaiting these statistics; but if you find

yourselves involved in an inevitable delay you will do well to mention in your report the causes which have led to it.

In other respects his lordship believes that existing instructions, if carefully attended to, are sufficient for your guidance. Arrangements have been made for the immediate publication in this country of all reports, both diplomatic and consular, annual and miscellaneous, as separate papers out of, as well as during, the Parliamentary session.

With regard to the transmission home of patterns and samples of goods mentioned in your trade reports, you will find in the correspondence an instruction which has been issued to Her Majesty's consular officers in some of the more remote countries. The principle is one which may with advantage be encouraged generally. when any special advantage is likely to accrue; but care should, of course, be taken to incur no considerable expenditure on this account without previous sanction from the secretary of state.

You will gather from the correspondence that Her Majesty's Government are anxious that every assistance that British traders can reasonably ask for should be rendered to them by Her Majesty's diplomatic and consular agents. They observe with pleasure, but without surprise, from this correspondence, that members of both services displayed the greatest readiness to afford their hearty co-operation in attaining the object in view. All that is therefore needed is a continued activity, not only in pursuing this object by the methods hitherto adopted, but in discovering any others that can legitimately be employed.

It is obvious that a matter of such importance cannot be deemed to have been finally disposed of during the comparatively brief consideration that Her Majesty's Government have been able to bestow upon it. Action must, moreover, be manifestly regulated by considerations of time and place. It is therefore not merely difficult, but inexpedient to attempt to lay down hard and fast rules for handling such questions. You will, however, find sufficient indication of what it is possible and expedient to do at once, as well as of the views of Her Majesty's Government on the whole question, in the memorandum and correspondence herewith inclosed. The principles there stated are, it is believed, those on which the diplomatic and consular action in commercial matters of this country has generally proceeded; and you will, in following those lines, be able to dispel any misapprehensions that have existed among the mercantile community as to what is being done and can be done by members of your service for their benefit. They will, it is hoped, be satisfied, by what has been said and by the directions given, that there exists an earnest desire on the part of Her Majesty's Government to accord to British enterprise all the assistance it can properly receive, and that nothing will be wanting on your part to carry out this purpose with zeal and judgment.

I am, &c.,

ROSEBERRY.

## CORRESPONDENCE RESPECTING THE QUESTION OF DIPLOMATIC AND CONSULAR ASSISTANCE TO BRITISH TRADE ABROAD.

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### I.—VARIOUS COMMUNICATIONS ADDRESSED TO THE FOREIGN OFFICE RESPECTING DIPLOMATIC AND CONSULAR ASSISTANCE TO TRADE, WITH REPLIES.

No. 1.

*Mr. K. Murray to the Marquis of Salisbury.*

[The London Chamber of Commerce, 84 and 85 King William street.]

LONDON, *February 5, 1886.*

MY LORD: The executive committee of the London Chamber of Commerce, on behalf of its East India and China trade section, has the honor to address your lordship regarding the position of British subjects engaged in trade and commerce in foreign countries, compared with that occupied by Germans, the French, and Americans, and other nationalities who enjoy the privilege and the advantage of being supported in their trade negotiations by the ministers of their several countries.

It has long been the rule of Her Majesty's foreign office to decline to sanction any support being given by British ministers at foreign courts, or by British consuls, to the merchants and traders of Great Britain in respect of matters of trade between them and the Governments or subjects of those countries in which they are resident.

The executive committee beg, however, respectfully to draw your lordship's attention to a great change which has taken place during recent years in the foreign trade of other countries, partly owing to the opening of the Suez Canal, in the matter of competition in our Eastern trade by the merchants of the Continent, and to the undoubted facts that these merchants are assisted in their undertakings by the moral, and frequently by the active personal, support of their ministers.

At a time when the Chinese Government is engaged in providing armaments on a large scale, and is known to contemplate large expenditure for railway and other industrial undertakings, it is of the utmost importance, in the interests of British trade, as well as of the merchants who have at much expense established themselves in China, that they should have the firm support and assistance of Her Majesty's representatives at Peking. If this is withheld from them, there is great risk of one of our most valuable trades, at a time of special activity, passing to a large extent into the hands of Germans and Americans; and the executive committee respectfully request that your lordship will, without delay, issue instructions in this sense to Her Majesty's chargé d'affaires at Peking.

The executive committee feel strengthened in placing this matter before your lordship by the statement made in the House of Commons

by Mr. Bourke, the late under secretary of state, last month, to the effect that Her Majesty's Government "would always be very glad to give such support as may properly be given to gentlemen engaged in commercial affairs."

The same influences, adverse to British trade, are in operation in Indo-China, Japan, and other Eastern countries, and the executive committee, and more especially its East India and China trade section, feel it to be their duty, in the interests of British merchants and manufacturers, to ask your lordship to take such steps as will afford to our traders that support from Her Majesty's Government, in the prosecution of their commercial enterprise, to which they consider they are entitled, owing to the peculiar position in which they are placed in consequence of the extreme activity of foreign Governments.

I am, &c.

KENRIC B. MURRAY,  
*Secretary.*

No. 3.

*Sir P. Currie to Mr. K. Murray.*

FOREIGN OFFICE, *February 22, 1886.*

SIR: With reference to the paragraph in your letter of the 5th instant, in which it is stated that "it has long been the rule of Her Majesty's foreign office to decline to sanction any support being given by British ministers at foreign courts, or by British consuls, to the merchants and traders of Great Britain in respect of matters of trade between them and the Governments or subjects of those countries in which they are resident," I am directed by the Earl of Rosebery to point out to you that the London Chamber of Commerce does not seem to be fully aware of the facts of the case.

It is expressly laid down in the general instructions for Her Majesty's consular officers that "it is the duty of consular officers to protect and to promote the lawful trade of Great Britain by every fair and proper means, and to uphold the rights and privileges of British merchants." These instructions have been in force for many years. Her Majesty's diplomatic representatives act in a similar manner in commercial questions which affect the trade interests of this country. But the secretary of state cannot give the support of Her Majesty's Government to commercial or industrial undertakings, or to applications for concessions from a foreign Government, where he is unable to form a correct judgment as to the soundness or practicability of such enterprises. Within the limits that this office can properly act in these matters, aid is constantly afforded to British merchants and ship owners, and in many instances this assistance is very fully acknowledged. If the London Chamber of Commerce can adduce specific instances in which there has been neglect of British commercial interests on the part of British diplomatic or consular representatives abroad, Lord Rosebery will give his best attention to any such representations which the London Chamber think fit to make. I am to request that these complaints may not be brought forward in general terms, but that full statements of the circumstances may be made in order that due investigation may take place.

## No. 4.

*Sir J. Behrens to Mr. Bryce.*

BRADFORD, March 3, 1886.

SIR: In fulfillment of my promise, I beg to offer a few suggestions as to the great service which our consuls and consular agents might render to our foreign trade.

They should be directed to obtain from the local authorities, the press, and all other available sources, the earliest and best information on all matters connected with trade and industry, and to transmit that information home for immediate communication to the commercial public.

The matters to which the attention of consuls is to be specially directed are the following:

1. Important schemes and undertakings emanating from Governments, public bodies, or joint-stock companies, in the execution of which English capital or industry might participate, or our trade and shipping be directly or indirectly interested.

To name only a few of the most important of such undertakings, I may mention: Public and municipal loans, banks, railways, mines, tramways, gas, drainage, harbors, canals, docks, lines of steamers, &c.

2. Of equal importance is the immediate transmission of information on—

(a) Any change in the tariff, whether yet under consideration or already officially announced.

(b) Any change in the classification of articles from that now adopted, explaining at the same time whether that change is the result of new distinctions made by custom-house officials, by experts, or by ministerial instructions. The earliest information on changes of this kind is of the greatest importance, as it enables the aggrieved party either to obtain redress by an appeal to a higher authority, or to avoid seizure, fines, and surcharges, by adopting his transactions to the new regulations.

(c) It is understood that similar information is to be obtained and immediately transmitted on all matters connected with shipping.

Further, that the consuls' attention should be directed to and reports required of—

(a) Changes in the mode of transport by sea, by canal, or by railway.

(b) The rates of carriage of goods, especially on all routes serving our imports and exports, and on all modes of conveyance which indirectly compete with our railways and ships.

(c) The laws regulating trade and industry, such as factory, mines, and shipping laws, bounties, bankruptcy, &c.

(d) Decisions of tribunals on important commercial cases.

(e) The expected or realized results of the annual produce of all articles imported into the United Kingdom for consumption or manufacture.

(f) Statistics, postal facilities, banking, monetary.

(g) Reports on all popular movements and important discussions on these and cognate subjects.

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The whole country is anxious for the opening of new markets, and it is in this direction that our consuls in such countries as Africa and Asia might render invaluable service to our trade by reporting information as to the produce and wants of the people they live among. That information should be accompanied by samples, patterns, prices, state-

ments of cost, and means of transport, &c., so as to be trustworthy guides to the enterprising British merchant, whose pioneer the consul should be.

Foreign consuls have been very active in sending home such reports and well-selected patterns, to furnish their industrial museums, which have proved of great benefit to continental industry.

Our German rivals have thus been able to obtain a first footing, if not a monopoly, of the trade, in several important countries, as, for instance, in Zanzibar, where English traders may now find it not so easy to succeed as if they had been efficiently supported from the beginning by information accessible to all.

In answering to the question how that information is to be made available, I beg to observe that the board of trade possesses already an immense mass of information, which it is ready to communicate to inquirers, but of which the general public ignores even the existence.

Here, again, we might learn something from our neighbors, who, in their "*Annales du Commerce Extérieur*," possess a most useful record of all matters connected with foreign trade.

I venture to propose that a weekly publication be issued by the board of trade on a similar plan to that of the French periodical.

While British ambassadors, ministers, and consuls would send material of the highest importance with reference to the foreign trade, the colonial and India offices would have to furnish equally useful information on our colonies and possessions.

If such a journal should be decided upon, I hope it will begin with a full account of all foreign and colonial tariffs, to be completed in successive numbers, giving English values of foreign measures and money.

This publication would form a most valuable record, saving a good deal of repetition when future changes have to be noticed.

Each year's number might form a volume, with an index attached.

The rare and mostly incomplete notifications on foreign trade which are now to be found in the *Gazette*, a paper which very few in trade ever see, might then be omitted.

To complete the improvement which I have ventured to suggest, a trade museum would have to be established in London, from which local museums might obtain on loan or gift the articles most useful to their local industries.

I am, &c.,

JACOB BEHRENS.

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No. 5.

*Mr. T. Craig-Brown to Mr. Kennedy.*

WOODBURN, SELKIRK, N. B., *March 12, 1886.*

DEAR MR. KENNEDY: I duly received yours of the 6th, inviting any "practical suggestions I might have to offer as to what greater measure of support might be afforded to British trade by British agents abroad."

Taking it for granted that this inquiry is a sequence of Mr. Bryce's welcome speech at the associated chambers' banquet, in which he intimated an arrangement with the board of trade for the better dissemination of commercial intelligence from abroad, I respectfully venture to submit that, to be complete and efficacious, the arrangement ought to include the colonial and India offices also. The countries and sea-



ports where the foreign office has consuls are not, as a rule, those which present the best prospect of increased British trade. In many of them protective duties are likely to tell with increasing effect against imports from this country, and, as a matter of fact, our exports to these have of late shown a marked tendency to diminish. To India and to our colonists on the other hand, our exports have gone on increasing with gratifying regularity. It is therefore of paramount importance that British trade should preserve its Indian and colonial outlets against the insidious and formidable enterprise of foreign (particularly German) competitors. Both from India and from our colonies the German, French, and Belgian Governments receive voluminous and valuable consular reports, of which their traders have shown that they know how to take advantage. But our foreign office not having agents in such parts of our own Empire, we would require to get similar reports through another channel. The board of trade will doubtless be able to say from which officials of the Indian and colonial services it is desirable to obtain commercial information. From colonial agents in this country, or from colonial sources abroad, such information might have too much *couleur de rose*.

If these remarks seem beyond the limit of my commission (and I admit they are), you will not the less allow, I dare say, that they are germane to the matter. I am most anxious that the success should be assured of the steps you are about to take to further our trade interests abroad; and I feel that, desirable as it is to have reports like those from Mr. Strachey and Captain Clipperton from all our consuls in foreign countries, it is, if possible, still more exigent that we should have similar information from the more promising markets of our colonies and India. That would probably be enough to aim at in the mean time; but I would go further. I would enlist the admiralty in the work, and have reports from naval officers at distant stations where there is neither consul nor colony. Even to such expeditions as that of Her Majesty's ship *Challenger*, an officer might be attached capable of reporting any undeveloped opportunities for trade that might come under his notice. In short, every source of information should be tapped. Thousands of men with capital are eagerly looking out for reasonably hopeful enterprises in any part of the world. The diminished area of our own land under cultivation, and the semi-idleness of so many great industries, make it hopeless to look at home for a revival. Abroad lies the only opportunity, and I believe that reports such as the foreign office contemplates would reveal openings that are now hardly dreamt of.

Being without personal experience of business in foreign countries, I cannot venture to suggest what assistance might be rendered by consuls to British traders "on the spot." As to consular reports, the subject is too vast and the conditions too varied to permit of generalization. Perhaps the readiest and most effective plan would be to send to each consul a volume of model reports for imitation and example.

In addition to tabular statements to be sent home at least once a year, there might be frequent special reports, as occasion required. From countries publishing official statistics, these tabular statements should be sent immediately after the former had become available. Quickness is everything—in compiling, in forwarding, and in publishing. In case of considerable tariff changes, for example, consuls might be instructed to cable or telegraph particulars, the board of trade distributing the information immediately through the usual channels—the press and chambers of commerce. In order to get full value out of

them, blue books, containing commercial reports from abroad would have to be very widely distributed amongst the various trade organs and the other leading newspapers.

With this I venture to send the rough draft of a tabulated report, such as might be invited from consuls once a year. It is incomplete and tentative, but, containing as it does, all that has occurred to me in the short time I have been able to devote to it, it is at your absolute service for adoption, mutilation, or for rejection *sans phrase*. I may add that it has the approval of the president of our chamber and of such other members as have been able to consult.

If I can be of further use, pray command me. I hope you will be heartily seconded by every trade organization and individual that can lend a hand to so good a work.

Believe me, &c.,

T. CRAIG-BROWN.

No. 7.

*Mr. C. E. Bousfield to Mr. Kennedy.*

LEEDS, March 14, 1886.

DEAR MR. KENNEDY: Referring to my conversation with you, and subsequently with Mr. Bryce, the other day, on the subject of the assistance rendered by Her Majesty's diplomatic and consular representatives abroad to British trade, at his request and yours I beg to submit the following observations:

1. It seems desirable that our representatives abroad should be informed that public opinion in commercial circles at home is strongly exercised by the fact of the increased and increasing competition of foreign manufacturers in almost all foreign and colonial markets. That in view of the great assiduity displayed by the consular agents of the principal manufacturing states of Europe, as well as of the United States of America, in sending home to their respective Governments frequent and detailed reports of the movement of trade in the districts to which they are accredited, and their well-known personal efforts to advance the exclusive interests of their own countries, increased vigilance and activity are incumbent upon all British representatives, in order that in every sense most-favored-nation treatment for British commerce may not only be a profession, but a reality.

2. To accomplish this end, our representatives might be recommended, where at all possible, to endeavor to keep a closer personal touch with British subjects trading in or to their districts, so as to be informed by them of any difficulties they may encounter, or disadvantages under which they may labor, as compared with foreign competitors. They should jealously note and fully report all concessions sought by or granted to other and rival nationalities. They might also be asked to give increased attention to the general movement of trade, to any changes in the sources of imports or direction of exports, and to take measures for obtaining reliable information as to new developments and requirements, or any facts or circumstances the knowledge of which might be useful, directly or indirectly, to the extension of British commerce. Further, they should be instructed to remit home with the least possible delay any information they may receive calculated to be of service to British merchants or manufacturers, without

waiting for the annual or even quarterly reports which they may be required periodically to make. In these days of rapid communication and frequent change information, to be of practical value, must be promptly given.

3. In order that information so received may as quickly as possible be placed before those whom it may concern, I cordially approve of the suggestion you made the other day, that a monthly or bi-monthly publication should be issued by the board of trade, a sort of "Annals of Commerce," in which should appear, as they arrive in time for publication, copies of or extracts from consular letters or reports, and any paragraphs or facts, properly authenticated, which might have commercial interest or value.

4. It would greatly increase their usefulness abroad if our representatives, when home on leave, had time and facilities given them to visit the manufacturing districts, obtain some little knowledge of the processes of manufacture, and talk matters over with merchants and manufacturers. Such a course would be very favorably regarded by the commercial community generally, and some valuable hints might be mutually given and received. In order to decide which centers of industry should be visited, each representative, while abroad, would have to inform himself as to the special requirements and tendency of trade in his own district. It might be announced in the board of trade publication above alluded to when such and such consuls would be in this country, so that any center of industry desiring to interview them might invite them to visit it.

5. Finally, I would observe that no branch of the public service, under present circumstances, could render more effectual assistance, within its own sphere, to British commerce than the diplomatic service; and I will venture to add that no acknowledgments or preferments will be more heartily approved by public opinion in this country than those which reward the faithful efforts of Her Majesty's representatives abroad.

Yours, &c.,

C. E. BOUSFIELD.

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No. 8.

*Mr. Birchenough to Mr. Bryce.*

MACCLESFIELD, *March 14, 1886.*

SIR: Referring to the conversation I had with you on the subject of "Consular Reports," I have ventured to draft a few suggestions of a more definite character than was possible in conversation.

The present reports are in many respects full, and their value is probably much underrated, because they are insufficiently known or studied by the commercial community. They appear, however, to possess the following defects:

1. The reports of secretaries of embassies and legations are too general to be of much use for strictly commercial purposes.

2. The reports of consuls and vice-consuls refer too exclusively to the movement of trade at foreign ports.

(In one instance, the information given too much resembles what used to be known as "political geography;" in the other, it too much resembles statistical tables of exports and imports.)

3. The Reports are not presented to the public in a sufficiently popular and usable form. This is, perhaps, one of the reasons for their being so little read.

What we want, instead of the present double system, are special periodical reports of consuls or consular commercial agents upon certain definite points of wide commercial interest. Such agents need not be in any way specialists, but they should have a general acquaintance with the chief English industries. For this purpose it would be well if they were encouraged to seize every opportunity of visiting the English industrial centers. It would be their duty to visit periodically the centers of production and consumption of the countries in which they are stationed, with a view to reporting upon—

(A)—*In countries which are our rivals as producers.*

1. The general condition, progress, and development of each important industry.
  2. The temporary condition of each important industry.
  3. Labor statistics and rates of wages in each important industry.
  4. All general facts of interest relating to industry. The development or otherwise of technical education, systems of apprenticeship, State aids to industry, direct or indirect, condition and habits of life of the laboring population.
  5. All matters relating to the working of tariffs.
  6. General condition of credit, or customary terms and modes of payment.
  7. Increase or decrease of exports by various industries to England, or to countries with which the English have large commercial relations (important).
  8. Increase or decrease of English imports, with probable causes.
- This does not pretend to be an exhaustive list. It indicates merely the kind of information which a consul could quite easily obtain, and which would be a real use to commercial men. The sum total of it would afford from year to year a pretty clear idea of the industrial progress of each of England's rivals, with a picture of the conditions under which that progress was being carried on. It would differ essentially from the special and particular information which private firms obtain for their own business purposes.

(B)—*In countries which are rather consumers of our products than our rivals in production.*

(The information which more especially falls under this head appears to be fairly well given in present consular reports.)

1. The general condition of the country, with special reference to purchasing power.
2. The general needs and peculiarities of the market.
3. The competition of other countries in the market, with general causes of their success or failure as competitors with the English (important).
4. All matters relating to the working of tariffs, especially if differential.
5. All general facts of interest relating to general credit, modes of payment, means of communication, &c.
6. In case the idea of commercial museums, such as are in process of formation in France and Germany, were adopted in England, it would

be the duty of consuls to obtain samples and information for such museums.

I would call attention to the fact that the character of the information suggested is more definite and pointed, and more practical in its bearing than the information which the consular reports at present contain. At the same time, it is general enough for it to be in the power of any man of ordinary business knowledge and ordinary industry and observation to obtain it. Its chief merit lies in the fact that it would make English commercial men acquainted with the progress of their rivals. No doubt some change in or slight addition to the present consular system would be rendered necessary, but the additional expense of any such change would not be very large. A body of men, or even the present consular staff, would soon be trained to obtain the materials for and to draw up such reports as are suggested. At first the information would be somewhat loose and incorrect, but it would rapidly increase in definiteness and accuracy as the men became more accustomed to their work. The reports would in a few years constitute a body of authoritative information as useful to manufacturers and to merchants as to trade societies and unions. They could never, of course, supply the place of individual and special knowledge of markets, but they would afford an excellent basis for and give sometimes a more prudent direction to private enterprise.

All foreign labor statistics, all information as to rates of wages, as to the conditions of foreign competition, would be of the greatest value in labor disputes in this country, as well as in the discussion of our general commercial policy. The growth of limited companies in England, involving, as such companies so often do, the substitution of a somewhat passive board for an energetic individual, is, perhaps, another reason for supplying the trading community with authoritative official information.

Not least important by any means is the form in which consular reports should be offered to the public. The present form is not sufficiently popular. The consequence is the reports, such as they are, are not read. It would be well to issue them collectively at fixed dates, carefully arranged and fully indexed, with general summaries, abstracts, or appreciations of the facts relating to each important industry.

They should be issued with the same attention to convenience of forms and arrangement as they would receive at the hands of any enterprising publisher who was issuing an important statistical handbook.

I am, &c.,

HENRY BIRCHENOUGH.

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No. 10.

*Sir J. Lee to Mr. Bryce.*

56 MOSLEY STREET, MANCHESTER, *March 31, 1886.*

MY DEAR SIR: When I had the pleasure of an interview with you I was asked my opinion of the desirability of appointing commercial attachés at the various foreign courts.

I think that such officials would be of no value to the commercial interests of the country, for this reason: The class of men who would be of use in such an office you could not obtain except at a great cost. Men who have an intimate and general knowledge of mercantile affairs

can use that knowledge to greater advantage to themselves by associating with some firm of merchants. And an official, educated ever so carefully in routine, without practical experience, would be a failure, and hamper the commercial department of the foreign office, as well as call forth a good deal of criticism from chambers of commerce and private firms.

As to consuls, I think that if their reports were published in an official gazette of commerce, with any other information useful to merchants and manufacturers, it would tend to encourage direct foreign trade.

Our foreign trade is nearly all in the hands of foreigners who are not natives of the country to which they ship; for example, the Mexican trade is in the hands of Frenchmen and Germans, and the Germans have two-thirds of the South American trade, and can, when they choose, transfer their connection to Germany. Lord Iddlesleigh asked me the other day, "Would you make our consuls into commercial travelers?" I said, "No, they would be of no use in such a capacity." But I do think consuls might be employed in sending home information as to the trade in their districts, viz, samples of large importations, patterns of textiles used in the district, information as to the products of the countries to which they are accredited, with value on the spot, probable freight tariff, showing at what value such products could be imported.

I inclose a circular issued by the United States consul-general.

I have no doubt if the Government established commercial museums as suggested by Mr. Kennedy a great good would result to the manufacturing interest of the country.

Yours, &c.,

JOSEPH C. LEE.

No. 15.

*Messrs. ——— to the Earl of Rosebery.*

(Extract.)

MAY 28, 1886.

In common with other firms we experience considerable difficulty in securing suitable representation abroad, and we would suggest that at each consulate a registry should be opened, and invitation given to the local trade to enroll themselves as being open to take up agencies for English houses. All members of such consular commercial registers to have the moral guarantee of the British consul as to their *bona fides* and sound commercial position. A corresponding register might also be kept of English firms who are seeking agents in that particular district. The mutual arrangements would be negotiated direct, and would involve no trouble to the British consul.

2. In connection with each consulate an apartment should be opened to the public containing in neat and convenient volumes the catalogues of English firms arranged under the various branches of commerce. A fee might be charged in this case for each catalogue thus deposited.

3. We do not see that the diplomatic service could render much practical aid, beyond, perhaps, doing their utmost to promote the public discussion and propagation of free trade principles.

4. Both the services should as far as possible encourage the public to avail themselves of the accommodation suggested in clauses Nos. 1 and 2 hereof.

[Inclosure in No. 18.—Memorandum relating to consular trade reports.]

At the present time there are several kinds of trade reports issued from the leading mercantile cities of the world.

1. Reports issued by merchants, which relate to one trade only, and which are usually forwarded by every mail, say each week or fortnight.

The object of a report such as this is to give immediate particulars relating to the position and probable early future of whatever article is written about, and such reports almost invariably contain the opinion of the issuing firms as to the desirability of immediate purchases or sales of the article written about. This report is usually got up to send to the firms' correspondents, generally to avoid the labor of writing letters to each of them.

2. Reports issued by commission firms, which sometimes deal with several branches of the same or of similar businesses.

Like the first report, the object of this is to promote immediate purchases or sales, or at least to stimulate trade in the various articles, in order to furnish business to the firms which issue such reports.

3. Reports specially prepared and issued at fixed periods, usually once a year.

These reports are a survey of the previous year's business, with statistics for several previous years, and contain many details which cannot be given in ordinary weekly reports.

Some of these annual reports are confined to a single trade, such as the cotton report of Mr. Ellison, of Liverpool, and the wool report of Messrs. Helmuth, Schwartz & Co., of London. Others of them deal with several branches of the same or similar businesses.

4. Reports which are issued by commercial bodies, such as the chambers of commerce in Shanghai, San Francisco, and other places.

These are general reports, and are usually confined to statistical accounts of the position and particulars of actual business done in the staple articles imported and exported, and also in goods manufactured in the city or district, but without any forecasts of the future, and without giving opinions calculated to cause either buying or selling. These reports are usually prepared by the secretaries of the associations which issue them, and are, as a rule, written with much impartiality.

It is clear from the foregoing descriptions, which fairly cover the different kinds of reports issued, that a consular report cannot take the place of any one of the four kinds, and this fact will always limit the number of readers of consular reports; indeed, merchants at present very rarely see them, as they are generally published too late to be of much practical commercial value. The complaint of merchants that consular reports are issued too late to have any value has only a certain weight, as they can never supply the place of Nos. 1 and 2, nor can they be issued as soon as reports Nos. 3 and 4. Every consular report should deal with the statistics of the place, and this cannot, of course, be done until the statistics are published. These are sometimes obtained from official and sometimes from mercantile sources, but in any case the merchants or associations will have their annual reports (such as Nos. 3 and 4) issued before the consul could possibly have his sent home, printed, and ready for distribution; therefore the complaint of delay in issuing consular reports has no weight whatever so far as it means that these reports could be of any service to merchants in enabling them to judge as to the advisability of immediate trading operations. But, nevertheless, the complaint has some weight in so far that the delay in issuing is unreasonable, because, though consular reports can never take the place of the mercantile reports at present issued, they can and should supplement them in many ways. They should have a special value of their own, and, if so, it is obvious that they should be printed and be ready for distribution as early as possible.

A consular report might contain a great deal that is not in any of the four kinds described. It should be, of course, written with perfect impartiality, and considering that the consul has no interest whatever in buying or selling (I am now speaking of non-trading consuls), he is at liberty to state his opinion and forecast as much as he thinks proper of the future.

Another feature of the consular reports is that not only must the consul take a wider view than the merchant does, but he should note the changes in the course and extent of trades, and examine into the causes which produce these changes. For example, a merchant preparing a trade report in China or Japan will not expend the time to explain the causes which have led to the enormous increase in the consumption of Bombay spun cotton yarn (to the partial exclusion of Lancashire yarn) in these countries, which has in twenty years grown from nothing to an annual consumption of about 200,000 bales, and also, though the merchant will not deal with the causes which have led to the decay of trades (as there can be no profit resulting therefrom), this is all proper work for the consul to do.

A further difference between the two kinds of reports is that while the trade reports at present in use are nearly all confined to one or more trades (except those called

No. 4, which are issued by associations like chambers of commerce), a consular report from any place should deal with the whole business—import, export, and manufacturing—of that particular city, and also the trade of the district so far as it was necessary.

Another difference between them is that the consul in his report should note and explain all alterations in monetary and currency affairs in the country in which he lives. For example, the only place I know where an account is to be found of all the gold and silver money in circulation throughout the world, and amounts coined annually, is in the United States mint master's report, and he collected his particulars from about thirty United States consular reports. For such statistics we should not require to be indebted to the consular reports of another country. (On this point please refer to Consul Crawford's report on the trade of Oporto.) Mercantile trade reports give current rates of import and export duties, and also record the changes made from time to time, but they hardly ever touch upon the causes of these changes, but this the consul should not omit to do, and this is also true of changes in the port charges and other dues levied on shipping.

From the foregoing it will be seen that a consular report should be a more complete, detailed, and exhaustive statement of commercial changes and conditions than it is possible could be issued by any member of a mercantile community, and that it would be valuable at the time of issue and also afterwards.

There are many reasons why consuls should be instructed to send full and early reports, three of which I mention, even though they were not much referred to by the commercial community:

1. It would be a training for the consul himself, and make him more competent and better able to fulfill the duties of his position.
2. It would enable his superiors in office to judge of his abilities.
3. The reports would form an official and continuous account of the trade of each place and country, which would be of the greatest value for reference.

I have explained it will be impossible for consular reports to be issued sufficiently rapidly to make them of any commercial value for immediate buying and selling operations; but to give an example of how long it should take to issue a report, I may mention that in Shanghai, where I lived for some years, all the statistical information is tabulated and made public through the custom-house, the chamber of commerce, and the circulars of merchants within a week or two after the year has expired. The consul is, therefore, in possession of all this information in time to let him deal with the figures and write his report during, say, the month of January. Assuming his report has to go to Peking to be *visé* before it is sent home, it could be sent there and returned to Shanghai within another month. A month and a-half more will bring it to London, and half a month should see it printed and ready for circulation. The Shanghai consular report for the previous year might, therefore, be in the hands of the public in this country on the 1st of May.

Should it be desired, I shall have pleasure in writing a fuller memorandum on this subject, and in sending a number of trade reports issued in different parts of the world, to show how different they are to what consular reports can and ought to be.

A. D. PROVAND.

LYDD'S HOUSE, MANCHESTER, June 15, 1886.

## II.—CIRCULAR LETTER TO CHAMBERS OF COMMERCE AND COMMERCIAL ASSOCIATIONS, WITH REPLIES THERETO.

### No. 20.

*Letter addressed to the Association of Chambers of Commerce.*

FOREIGN OFFICE, March 4, 1886.

SIR: I am directed by the Earl of Rosebery to state to you that his lordship is taking into immediate consideration the general question of the assistance rendered by Her Majesty's diplomatic and consular representatives abroad to British trade. The instructions under which these officers act are to protect and promote British trade by every fair and proper means. The secretary of state cannot, however, give the support of Her Majesty's Government to commercial or industrial under-



takings, or to applications for concessions from a foreign Government, where he is unable to form a correct judgment as to the soundness or practicability of such enterprises. Within the limits that this office can properly act in these matters aid is constantly afforded to British merchants and ship owners, and in many instances this assistance is very fully acknowledged.

Lord Rosebery will be glad, in order to enable him to deal in a satisfactory manner with the general question, to receive at your earliest convenience any practical suggestions which the Associated Chambers of Commerce may have to offer as to what greater measure of support they think might be afforded by British representatives abroad to British trade. It must, however, be borne in mind that these officers cannot act as agents for particular firms, nor could they with propriety decide upon the respective merits of rival enterprises, or the claims of British subjects of equal respectability and financial position, who may be competitors in regard to particular concessions or enterprises.

I shall be glad to receive your answer to this letter by the 20th instant.

I am, &c.,

J. BRYCE.

No. 22.

*Mr. J. S. Jeans to Mr. Bryce.*

THE BRITISH IRON TRADE ASSOCIATION,  
*Victoria Mansions, Westminster, March 18, 1886.*

SIR: The circular letter which you addressed to this association on the 4th instant, with regard to the general question of the assistance rendered by Her Majesty's diplomatic and consular representatives abroad to British trade, having been considered, I have to call your attention to the several points hereunder noted:

1. That it should be an instruction to Her Majesty's diplomatic and consular representatives to make every effort in countries that are likely to require to import any considerable quantity of the metals which they use, to obtain the most-favored-nation treatment and the utmost possible modifications of tariff duties.

2. That where Her Majesty's diplomatic and consular representatives find that efforts are being made by the corresponding representatives of other countries to obtain concessions to traders in such other countries that are calculated to divert from this country orders that would otherwise come to us, they should be instructed to use every proper means to counteract influences so used; but that unless they find that the representatives of other countries are in such matters acting on the aggressive, it may not be necessary for them to interest themselves more actively than at present on behalf of British trade.

3. That Her Majesty's consuls should be instructed to endeavor to obtain and publish in their periodical consular reports every possible information with reference to concessions given to the trading or other representatives of countries other than our own, together with the terms of such concessions, and all available information as to prices, &c.

4. That Her Majesty's consuls should have explicit instructions to make every effort to communicate through their consular reports all

those matters of a cognate character that would be likely to be of interest and value to the trade and commerce of this country at the earliest possible date after such information is available.

5. That a general instruction should be issued to Her Majesty's consuls to endeavor as far as they possibly can to convert foreign money, weights, and measures into their English equivalent in their consular and diplomatic reports, giving at the same time the original currency and weights, so that those who are specially interested should have an opportunity of distinguishing in all cases the accuracy and conditions of the conversion.

6. That in bringing out their consular reports, especially where they are of a voluminous character, Her Majesty's consular agents should be instructed to attach an index that would give an immediate clew to the subject-matter which each report contains, it being necessary (in the absence of any such index) for those who study the reports to wade through very many pages of matter that might not be of the slightest interest to them before they light upon a fact that is calculated to be of value.

7. That Her Majesty's consular agents should be required to furnish to the foreign office for publication by that department all changes that have occurred, directly they occur, or that are in contemplation, in the tariff duties of the countries in which they respectively reside, and that Her Majesty's consuls should in all such cases endeavor to make themselves acquainted with, and to furnish information upon, the probable effect of such tariff changes on the trade of the several countries with the United Kingdom.

The secretary of state for foreign affairs in his circular letter of the 4th instant states:

The secretary of state cannot, however, give the support of Her Majesty's Government to commercial or industrial undertakings, or to applications for concessions from a foreign Government, where he is unable to form a correct judgment as to the soundness or practicability of such enterprises.

This association is not aware that this statement is intended to cover any action that might advantageously be taken by Her Majesty's consuls with a view to obtaining concessions for British subjects for such important matters as, for example, the construction of railways in China, and this association would point out that the question of obtaining concessions from the Chinese Government for that purpose is not likely to be much longer in abeyance, and that agents have, according to information which has reached this association, been endeavoring to negotiate with the Chinese Government to obtain such concessions for business houses in Germany, France, and the United States of America respectively. In matters of such vital concern as that here referred to, it would seem to this association that the influence of Her Majesty's representatives abroad might be suitably employed to endeavor to place English houses on, at any rate, the same footing as to facilities for obtaining such concessions as that upon which the competitive houses in other countries have been, or are likely to be, placed by the action of their diplomatic representatives abroad.

I am, &c.,

J. S. JEANS,  
*Secretary.*

## No. 24.

*Mr. J. Bain to the Earl of Rosebery.*

[Chamber of Commerce and Manufacturers, 7 West George street.]

GLASGOW, *March 19, 1886.*

MY LORD: I have to acknowledge receipt of your circular letter of the 4th current, informing this chamber that your lordship has presently under consideration the general question of the assistance rendered by Her Majesty's diplomatic and consular representatives to British trade, advising as to the instructions under which these officers act and the limitations requiring to be imposed, and requesting any practical suggestions which this chamber may have to offer "as to what greater measure of support they think might be afforded by British representatives abroad to British trade."

This communication has received the attentive consideration of the directors of the chamber and of a committee specially appointed by them there anent.

It appears to the directors that they can most satisfactorily comply with your lordship's request by submitting their remarks separately as bearing upon, viz—

1. The consular staff;
2. The diplomatic service; and,
3. Her Majesty's foreign office department.

1. *The consular staff.*

The directors, while fully recognizing and acknowledging the ability displayed in the reports from time to time furnished by many of Her Majesty's consuls, are impressed with the belief that benefit would ensue to the trading interests of this country if the selection of gentlemen for the position of British consuls was made with greater regard to their special fitness and aptitude to grasp and deal with commercial affairs, and from among persons in sympathy with business pursuits, in preference to those whose qualification is derived from naval or military service.

As respects the instructions issued by the foreign office to their consular staff, the directors consider that improvement might be made by approximating to the systems adopted in America, France, Germany, and other European nations, and in their opinion Her Majesty's consuls should be instructed thoroughly to inform themselves respecting the trade and requirements of the country or district to which they are accredited, and promptly as well as periodically to communicate to the foreign office full reports upon all matters connected with the commerce of Great Britain.

In the event of any considerable mercantile scheme or transaction being promoted within the consular district likely to be of interest to any section of the commercial community in this country, it should be the duty of the consul immediately to transmit the particulars.

It should further form part of the instructions to Her Majesty's consuls to report on the general conditions of business and trade and the prospect of crops, &c., in the country where the consul is resident; the more important commercial and manufacturing enterprises existing in it; its imports and exports, distinguishing their origin and destination; tariffs and their changes; custom-house duties and regulations; facilities or otherwise of transport by sea and land to and from the country

or consular district; the competition between the exports of Great Britain and other nations in manufactured or other products, and the difference or superiority of either or their suitability for the market of the country of import; if the British products are inferior to others, pointing out wherein the inferiority consists; the internal laws and regulations of the country in relation to its commerce; whether preferences are given to native creditors, or justice is more or less reliable, obtainable, or costly; to afford ready information on these points, and to answer questions bearing upon commerce when requested by British merchants and manufacturers, and generally within the scope of their public functions; to aid in extending the commerce of this country abroad, especially in districts which have been newly opened to trade.

\*     \*     \*     \*     \*

The directors would suggest that such information in a sufficiently condensed form should embrace whatever is of general interest to the commercial community of Great Britain, including subjects of special interest appearing in the consular reports of other countries; that if issued gratuitously copies should be sent to all commercial bodies or otherwise; that a small charge might be made, so as to allow the journal to be extensively obtained by private mercantile firms as well as by the working classes.

In addition to the instructions which the foreign office may deem it proper to give to their diplomatic and consular officers as to procuring and transmitting information on strictly commercial affairs, the directors are of opinion that it would be of the very greatest importance if information were furnished from time to time from the principal trade centers of the world respecting the wages paid for labor, cost of living, and other relative matters. Such a compilation of facts would be a most valuable contribution to the commercial knowledge of this country.

The labor question is one of yearly increasing interest, and that both manufacturers and artisans should be fully informed as to its conditions is evidently of vital importance.

In 1884 the Government of the United States issued a "Labor Circular" to their consuls, directing information to be procured upon a variety of subjects connected with labor, and answers to the following, amongst other questions, were directed to be obtained from every manufacturing town in all foreign countries throughout the world:

1. As to the rates of wages paid to male laborers of every class, mechanical, mining, factory, public works and railways, domestic, agricultural, &c.

2. The cost of living to the laboring classes, viz, the prices paid for the necessaries of life, clothing, rent, &c.

3. Comparisons between the present rate of wages and those prevailing ten years previously.

4. The prevalence of strikes, and how far arbitration entered into the settlement of disagreements between employers and employés; the effect of strikes on the advancement of labor, and their general effect on the industrial interests concerned.

5. Respecting co-operative societies, their formation and practical working, and whether prosperous or otherwise.

6. The general condition of the working people, their hours of labor, how they live, their homes, their food, clothes, &c.

7. The means provided for the safety of employés in factories, mines, mills, railroads, &c.

8. The comparative share borne by the working classes in local and general taxation.

## 9. The causes which lead to their emigration, &amp;c.

Answers to these and many other important queries bearing on the labor question were received from every colony and country in which the United States had consular representation, the whole being arranged and published in a systematic and condensed form, presenting a most valuable and comprehensive contribution to the commercial knowledge of America, and a very complete record of the ability and industry of its consular staff.

The information thus obtained, besides being of the utmost importance to the mercantile community, would, the directors believe, have a beneficial effect on the minds of the working classes in this country, by enabling them to compare and contrast their condition with that of their fellow-laborers elsewhere.

I have, &c.,

JAS. BAIN,  
*President.*

No. 25.

*Mr. J. Hornsby to the Earl of Rosebery.*

AGRICULTURAL ENGINEERS' ASSOCIATION, 342 STRAND,  
*London, March 19, 1886.*

MY LORD: I am directed by the council of this association to acknowledge the receipt of your lordship's letter of the 4th March, and, in reply, to offer, for the guidance of the foreign office, the following suggestions:

That a monthly (or quarterly) report be issued by the foreign office embodying the following particulars, derived from our diplomatic and consular agents abroad, or from other duly qualified persons—

- (a) As to the general condition of trade in their respective localities.
- (b) Of the volume and description of the imports into such districts from competing nations, giving, as far as practicable, the fluctuations in prices of the commodities enumerated compared with the prices of home manufacturers.
- (c) Current rates of freight.
- (d) Alterations, or intended alterations, in import duties, customs, or landing charges.
- (e) Any newly created demand for goods which are or might be produced in England.
- (f) The introduction by foreign traders of new goods, indicating where manufactured, and the extent of the sales effected.
- (g) Suggestions as to the need for, or possibility of, adapting English goods to the requirements of the district, or comparisons which may be made between English and other goods of the same class, particularly as to their suitability for the market.
- (h) Any special facilities for fiscal arrangements, duties, rates, or any other means which governments, railway companies, ship-owners, and agents offer to merchants and manufacturers of other nations to the detriment of British trade.
- (i) Early intimation as to prospects of trade, particularly with reference to projected large public or private works for which British manufacturers or merchants might desire to tender.
- (k) Hours of labor and rates of wages paid by leading industries.

NOTE.—In preparing these reports, different classes of goods should be kept separate; for instance, agricultural implements, also steam-

engines, should be classified so as not to be mixed up with all kinds of machinery. This is done by the American consuls, and renders their reports of greatly increased value.

On receipt of these reports by the foreign office they could be carefully classified and forwarded to the various chambers of commerce and associations representing the leading branches of British industry, for circulation at the earliest possible moment, or they might be communicated to the press. Information concerning agricultural implements and machinery would be communicated to the secretary of the Agricultural Engineers' Association for the use of its members.

Whilst this association disclaims any desire that English consuls should in any way act as intermediaries in trade, or judge between competing British firms, they should be requested (following the example of American and German consuls, who from their business capabilities and energy render most valuable assistance to the trade of their respective countries) to interest themselves in, and, when possible, attend exhibitions, competitive trials, and similar undertakings in the interest of British manufacturers and traders, so that no undue preference may prevail either in conditions of trial or distribution of awards antagonistic to the general body of British traders.

On this point reference is made to inclosed letter from Mr. James Howard.

I have, &c.,

JAMES HORNSBY,  
*President.*

[Inclosure in No. 25.—Mr. J. Howard to the Secretary to the Agricultural Engineers' Association.]

CLAPHAM PARK, BEDFORDSHIRE,  
March 15, 1886.

DEAR SIR: I cannot come up to the meeting to-morrow.

Some years ago the American consul at Prague showed me a copy of the instructions which consular representatives receive from the United States' Government. I presume it would not be difficult for the foreign office to get a copy, which, so far as my recollection serves me, would be an excellent guide.

Consuls are instructed to make efforts for the introduction of American manufactures, and to report upon openings for American commerce; but they are not bound to use their efforts in behalf of a particular manufacturer or merchant; indeed, they are cautioned against using their influence in this way.

Again, at each of the French international exhibitions I have attended great efforts have been put forth by the American representatives, who have made a point of being present at any competitive trials which have taken place, and exerting their influence with the jury, not without advantage to American exhibitors.

I am, &c.,

JAMES HOWARD.

No. 26.

*Mr. J. Fox Turner to Mr. Bryce.*

CHAMBER OF COMMERCE, MANCHESTER,  
March 24, 1886.

The board notice with pleasure from your letter that, in cases in which the foreign office is able "to form a correct judgment as to the soundness or practicability of" any enterprises, the support of Her Majesty's Government will be accorded.

Your letter desires suggestions "as to what greater measure of support this chamber thinks might be afforded by British representatives abroad to British trade."

Frankly, therefore, my directors wish to state that a greater measure of support would seem likely to be afforded by the appointment on the personal staffs of the various embassies of some gentleman specially informed as to mercantile affairs, and able to advise the chief of the legation or consulate thereon. This gentleman should be charged with the collection and arrangement, and prompt issue (without the delay which exists at present) of such information, in a statistical or other form, as may in his judgment be of service in directing the attention of those whom it may concern to the possibilities of trade in the country to which he is accredited.

Without desiring to give to the consular reports furnished to the Government of the United States by their agents a greater measure of praise than they deserve, my directors nevertheless are of opinion that, in some important particulars, the agents of the British foreign office might take example from their American *confrères*, as well as from the reports of our own India office, which are very valuable.

If the chamber might venture to make more detailed suggestions, they would recommend that immediate intelligence should be forwarded to the foreign office of any changes or contemplated changes, in the countries to which they are accredited, likely to affect British trade, such as:

1. Alterations in tariffs.
2. New roads, railways, waterways, or telegraphs, intended or needed.
3. Changes in trade routes by land or water.
4. The state and prospects of agriculture, including improvements in methods and changes in cultivation, and the character of the seasons.
5. The course of prices and wages.
6. The state of the currency, changes therein, and their causes.
7. New manufactures.
8. Foreign competition with British manufactures.
9. Any other facts bearing upon the economic condition of the people.

Members of this board who have been resident abroad, and brought into contact with Her Majesty's consuls, readily admit the general ability of the British service; but in view of the paramount importance of commerce to the country, and the increasing closeness with which British trade is being pressed by foreign competition, it is desirable that gentlemen selected for this service should have adequate commercial knowledge.

\*   \*   \*   \*   \*   \*

I have, &c.,

J. FOX TURNER,  
*Secretary.*

No. 29.

*Mr. Hill to the Earl of Rosebery.*—(Received May 28.)

[The Liverpool Steamship Owners' Association, 10 Water street.]

LIVERPOOL, May 27, 1886.

MY LORD: This association, understanding that your lordship is ready to receive any practical suggestions as to the support which might

be afforded by British representatives abroad to British trade, have directed me to offer the following for your consideration, viz :

That British consuls should in all cases watch and report periodically the course of trade and agriculture at the places to which they are accredited, with an especial reference to its bearing upon the imports of British manufactures.

That they should note any alteration in the source of the district supplies of seeds, machinery, raw and manufactured products, &c., distinguishing between increased home sources of supply and manufacture, and that of foreign countries other than Great Britain.

This association is of opinion that if such information is regularly tabulated and reported, and supplemented by such general information as is given by the American consuls to the United States Government, the British trader, both manufacturer and carrier, would be in a position to try and meet foreign competition at its first inception, instead of only becoming acquainted with the facts (as in many cases they now do) after the trade has been irretrievably lost to this country.

I have, &c.

GRAY HILL,  
*Secretary.*

### III.—CORRESPONDENCE WITH HER MAJESTY'S DIPLOMATIC OFFICERS ABROAD.

[Inclosure in No. 81.—Mr. J. A. Crowe to Viscount Lyons.]

PARIS, *March 17, 1885.*

MY LORD: Three questions are asked in Earl Granville's dispatch of 11th March, 1885, as to the extent of the assistance rendered by the French Government to French exporters and manufacturers.

The first question has reference to museums or depots of specimens of articles which are in demand abroad.

During the debates which took place on the budget commission of the Chamber of Deputies in 1884, opinions were freely expressed in favor of creating a central commercial museum; and a certain amount of concern was shown at the omission, in the estimates of the ministry of commerce, of a charge for the purchases of samples fit for exhibition in an establishment of this class.

In April of last year I had the honor to inform your lordship that a commission had been appointed to consider the question of establishing French chambers of commerce abroad; and I forwarded copies of a report made by that body, comprising rules and by-laws for the formation of these chambers. It appears that in the course of its deliberations the commission was also led to inquire what course it would be most advantageous to promote—that of forming a commercial consular museum, attached to the ministry of commerce in Paris, or provincial museums at the seat of manufactures in various parts of France. It is possible that the question of cost may not have been foreign to the decision which the commission then took and the minister afterwards approved. A sum of (say) 50,000 francs (£2,000) voted annually might, it was thought, be too small for the preliminary expenses incident to the formation of a single central museum, yet it would go a great way towards promoting the establishment of regional commercial museums organized by chambers of commerce or placed directly under their patronage.

M. Rouvier, minister of commerce, declared his readiness to move the grant of 50,000 francs for district commercial museums, and charge that amount in the budget of 1885. In support of the estimate he stated that "in many places private enterprise had shown itself ready to strengthen the hands of the Government, either by expanding or transforming museums already in existence, or in founding new establishments of the kind in places approved by the commission."

It appears from a circular of the 11th September, 1883, addressed by M. Herrisson, then minister of commerce, to the chambers of commerce of France and Algiers, that thirty-five out of forty French chambers reported in favor of provincial as against a central museum. Three chambers only voted for the latter; two were opposed to th



creation of any museum at all. Bordeaux, Lille, Lyons, Rouen, Beaune, and Algiers claim to have taken a step in advance, by laying the foundation of local, commercial, and industrial permanent exhibitions. This, and M. Rouvier's subsequent action, decided the issue. No central establishment was formed, and aid will be given in a small way to local efforts.

On the 18th of last December M. Rouvier, who had succeeded M. Herrisson, spoke at a meeting of the union of syndical chambers of Paris, and in the course of his remarks he said: "As regards commercial museums, I have more than a promise to make; I have been fortunate enough to obtain a small credit, which will enable us to begin a work which promises much for the future." On the 21st of the same month M. Rouvier was at St. Quentin to inaugurate a commercial museum founded by the Industrial Society of that city. He said in his opening speech: "The commercial museum which is to be opened this day is the first of its kind that has been created in France. The professional education which the Industrial Society of St. Quentin has organized for the working classes is an effort of private enterprise deserving the highest approval."

The second question relates to the immediate publication of consular reports as to openings for trade. As to this, the *modus operandi* is as follows: Consuls are instructed by a circular of 1883 to draw up reports embodying the information above mentioned. Immediately on the receipt of these papers they are issued in a publication called the "Moniteur Officiel du Commerce," which appears in Paris every week. I have looked at these reports. They were full and detailed at first, drawn up every fortnight; they were interesting from the information they contained. Later on, they were only forwarded monthly, but they had gradually come to be mere market bulletins; useful no doubt to the public generally, but probably forestalled for the mercantile community by private accounts. The system, however, has given satisfaction to those who think the public insufficiently furnished with knowledge on mercantile questions; and for the present monthly trade reports from consuls are to be continued.

As to the third point, viz: Are exporters allowed to use consuls as agents? The answer is in the negative. There is but one thing which a consul is allowed to do, and that is to answer questions addressed to him directly by a merchant or a commercial firm in France. He is authorized and encouraged to do this by the French foreign office. But communications of this class must not assume such a regular character as practically to lead to the consul's being the habitual and constant adviser of any firm or of any individual.

I have, &c.,

J. A. CROWE.

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### No. 32.

*Extract from a further letter from Mr. J. A. Crowe.*

In very busy consulates—for instance in ports—the consul has office work and regulation duties to which he must attend at fixed hours. Whilst merchants and shippers go to the exchange, where the consul might hear the commercial news of the day, he is confined to his own office. When he becomes acquainted with facts, they are frequently old and comparatively useless. But the consul, as a general rule, is not at a post of vantage for communicating other than local information. He watches the incoming and outgoing trade of a port, and knows little or nothing of the centers of commerce and manufactures. He will tell of shipping that has arrived and sailed, and be able to report the quantities of goods that have come in and gone out; but he will not be able to speak in detail of the current of trade, and will always be unable to say what the exact proportions are of the business done with various places. Take a case. Marseilles does a large business with the Mediterranean and beyond it, but no consul at Marseilles can give the details of that trade, nor can he get it unless the custom-house opens its books to him—which they do not. The official statistics will tell in October of any year how many kilograms of goods of every kind have entered

or left the port in the year preceding. They are silent as to whence or whither they have come and gone. At the great industrial centers we have either no agents or only subordinate agents, whose remuneration is so small or whose position is so unimportant that they cannot be asked to furnish reports, which, indeed, in some cases they would not be able to draft.

The French are not more favorably situated in this respect than we are. But they have lately been stimulated to extraordinary exertion by their Government, and market reports are obtained from them every month, together with suggestions as to classes of goods which may be considered likely to yield a good market. The casual trader may think he derives benefit from these reports. The merchants of each place have usually forestalled these possible rivals, *even before* the information reaches the consul. But are consuls and diplomatic agents to be considered as informants of traders? Is that their function? Can they vie in any way with the merchant whose interest it is to be informed? I think not.

Yet they may well do this, that is, collect and report *promptly* all information regarding changes in foreign tariffs. But as to this I desire to point out that very few consuls are usually furnished with the papers in which publicity is given to such facts. The facts, the decrees, the laws appear, not in local papers generally, but in the official journal of the capital; and it is surprising, yet true, that these facts are habitually neglected by the provincial press. It is on that account requisite that minute attention should be given to these matters at such centers as Paris, Berlin, &c.; but it is also desirable that consulates should be allowed to subscribe for the official journals, in which the information required appears at first-hand.

Let us suppose the information duly brought together and dispatched to England, the question arises, What shall be done with it there?

Before answering that point, I may add, with regard to consulates, legations, and embassies, that in the matter of changes in markets consuls probably report oftener than secretaries; but the consuls only do so when specially called upon to do so, or in their annual reports. Secretaries seldom do so at all. It is not even an instruction that their half-yearly reports should necessarily be commercial reports; and it constantly, and often necessarily, happens that the half-yearly reports are not written at all.

The question of demand for labor is no doubt worthy of study, but I venture to affirm that it is one which can never be grappled effectually by consular or diplomatic officers, because the statistics of labor are not in existence, and where they are collected, as in France, are not made public till three years after date. It is not unlikely that there exists a certain freemasonry which by its agencies spreads information as to the briskness or slackness of demand for certain forms of labor; and this is probably true to a large extent in France, in a smaller measure in Germany. But wages often differ in different and not very distant places, and they differ constantly, and this is one of the elements of doubt in the study of the theory that prices necessarily find a common level. I suspect the existence of a wave which perennially disturbs the level. In Paris, I have been told, the news of a demand for hands in certain trades is so rapidly spread that it causes a sudden arrival of numbers quite in excess of the demand. But in less active places there is much more sluggishness. I fear the attempt to obtain official information as to the demand for labor could only be obtained by wan-

dering agents, and these might find it difficult to obtain correct information if their intentions were known.

In Paris, which is my headquarters, all information respecting customs tariffs and interpretations of custom-house dues are reported as they appear, or before they officially appear. They are forwarded to the foreign office, which no doubt transmits them at once to the board of trade. What should be done with them there?

In France they are made public at the expense of the state; in Germany they are inserted in an official publication called the *Handels Archiv*. The French publications are, a weekly paper called *Le Moniteur Universel du Commerce*, in which French legislation, then foreign legislation, reports of markets by French and foreign consuls, are printed in a condensed form, sometimes as original matter, sometimes in the shape of extracts. Subordinate to this is the *Bulletin du Commerce*, likewise official, in which all new trade-marks registered are given, together with the decisions in respect of infringements in the courts of France or abroad. The *Bulletin Consulaire* brings together reports from French consuls much in the same form as our consular reports, but are published at shorter intervals and without the formality of being laid before Parliament. The *Annales du Commerce Extérieur* give all treaties, new tariffs, custom-house circulars, and statistics of foreign commerce *in extenso*, in *fascicules* which are published monthly.

The returns of imports and exports are published regularly every month, so as to give approximately in January the results of the trade and navigation of France for the past twelve months. The detailed statistics of this class are only published annually, so, for instance, that those of 1885 will appear, in October of 1886. Besides these we have the *Bulletin de Statistique*, monthly publication of the ministry of commerce, including statistics of the ministry of finance, taxation, and railways; *Bulletin de Statistique des Travaux*—public railways, ports, rivers, roads, canals; and *Bulletin de l'Agriculture*—crops, phylloxera, wine, &c.

Either we may imitate the French in this abundance and extent of these publications, or we may select some capable person to summarize this information for the purpose of communicating it to the public. The public at large will be satisfied with very summary *précis*, the chamber of commerce and mercantile bodies might desire full copies. The first mode might be employed at some, not necessarily at a heavy cost. The second might be communicated in this wise:

Open an office, say, at the board of trade, similar to the "*Bureau du Commerce*," which was opened nearly two years ago at the *Ministère du Commerce*, in Paris. New tariffs, circulars, and news could be displayed there for a certain time on the walls of this office, and to be open to any one to inspect and to copy. Provincial chambers would probably ask the London chamber to get them copies of these documents. If the mercantile community has a natural interest in obtaining early information of the kind stated, why should it not expend something for getting it? It is immaterial whether they pay for it in the shape of printed matter or otherwise.

Of course, it may be within the possibilities that a diplomatic or consular agent should find it feasible to promote the interest of firms seeking concessions in remote countries. But the tact required for this sort of duty is rarely found, and I will only recall the recent case of an English minister, whose interference in a matter of this kind led, so far as I can recollect, to a request that he should be recalled.

[Inclosure in No. 34.—*Report by Sir B. Boothby on the assistance rendered by the Belgian Government to Belgian exporters and manufacturers.*]

Notwithstanding the smallness of her territory, Belgium as a manufacturing country ranks with the most important states of Europe. Her manufactures are also her chief exports. Their maintenance and promotion consequently receive the special attention of every Belgian Government. The principal means by which assistance can be rendered by a Government to the exporters and manufacturers of the country is by keeping them constantly informed of the requirements of foreign markets and of the nature of goods which are in demand there. In Belgium this is effected by means of commercial reports furnished by consular agents abroad, and by the establishment of a commercial museum in Brussels, where samples of goods most in request by foreign consumers are exhibited, and where information respecting the same may be obtained.

*Assistance rendered to exporters and manufacturers by supporting museums or dépôts of specimens of articles which are in demand abroad.*

In 1881 a commercial museum was founded in Brussels for the purpose of supplying Belgian exporters and manufacturers with useful information respecting the state of foreign markets.

This museum owes its existence principally to M. Frère-Oban, the then Prime Minister. It is situated in the center of the town, in the immediate neighborhood of the Exchange, and at about an equal distance from the two principal railway stations.

The first costs connected with the establishment of the museum were as follows:—

	Francs.
Purchase of the building.....	129,727 58
Expenses of converting ditto.....	112,000 00
Furniture.....	70,000 00
Wages to work people during 1881.....	4,210 00
<b>Total.....</b>	<b>315,937 58</b>

In addition to the above costs, there is a mortgage charge payable to the town of Brussels of 10,620 francs per annum for a term of sixty-one years; and this amount, if capitalized, would represent a sum of 241,192 francs.

The estimate in the Foreign Office Budget of this year for the maintenance of the museum (exclusive of salaries, annuities, office furniture, water, heating, and lighting) is 25,000 francs.

The public are admitted daily to the museum free of charge. At the present time the average number of visitors to the museum during the day is about seventy.

In order to give the required information in the easiest possible manner, the museum has been divided into different sections, consisting of—

- (1) A collection of samples of imported and exported merchandise.
- (2) An office of inquiry.
- (3) A library.
- (4) Offices under the ministry of railways, posts, and telegraphs.

These departments are arranged as follows:

(1) *Collection of samples.*—The samples exhibited in the museum are received from Belgian agents abroad, who have collected them in the country or locality where they reside.

These samples form three large classes:

(a) *Samples of goods for exportation*, intended to make the Belgian manufacturer understand the nature and quality of goods sold by foreign rivals in all parts of the world. By studying this collection he is enabled to judge whether he can produce goods of a like description at as low a cost price as the home manufacturer.

(b) *Samples of goods for importation*, intended especially to assist Belgium manufacturers by exhibiting to them the raw material required for the supply of their factories, and which it would be to their advantage to procure directly from its place of production.

(c) *Samples of packing-cases and methods employed for packing adopted in different countries*, material and means employed to prevent the deterioration of goods, and to give them the appearance desired by the consumer.

In cases where the utility of it is clearly shown, and where it is possible to do so, cuttings of samples are given to applicants for them.

In order to facilitate reference, a double system has been adopted as regards the classification of samples.

Thus, for the purpose of exhibition the samples are arranged according to the nature of the product, all samples connected with the same industry being placed

together; whilst in the catalogue the samples of any particular product are classed according to the country of their production.

Details respecting the goods of which samples are exhibited are supplied by the Belgian consuls by whom they are sent, and these are indicated in the catalogue.

(2) *Office of inquiry.*—This office enables the public to obtain further information on points which an examination of the collection of samples may not suffice to explain.

(3) *Library.*—The library of the museum is composed of technical treatises, of directories of the principal countries of the world, of foreign newspapers dealing with commercial and industrial questions, and notably of such as contain notices of adjudications.

*Foreign adjudications.*—Rate books, plans, estimates, and samples connected with adjudications which are likely to interest Belgian manufacturers, may be consulted in the reading-room of the museum. Notices of their arrival are communicated in due time to the "*Moniteur Belge*," and to the leading newspapers of the country.

The *Bulletin* of the Commercial Museum is a weekly publication, of which the catalogue of the collection forms the principal part. It includes also notices of Belgian and foreign adjudications, as well as information derived from foreign technical journals, special publications, &c., which is supplied by Belgian agents abroad for the use of exporters and manufacturers at home.

(4) *Offices under the Ministry of Railways, Post, and Telegraphs.*—To complete the elements of information afforded to the public by the ministry of foreign affairs, two offices connected with the department of railways, posts, and telegraphs have been transferred to the Commercial Museum.

One of these offices gives every information which may be required respecting Belgian state adjudications. The other office supplies information as to transport tariff for merchandise, by rail or sea, to all parts of the world.

*Assistance rendered to exporters and manufacturers by the immediate publication of consular reports.*

One of the most useful services rendered by consuls to their country is that of constantly calling the attention of the public through the Government to the openings offered to trade by the different markets of the world.

But in order that the voice of the consuls should not be lost, it is necessary to provide a channel of communication through which it may be heard.

In Belgium several attempts have been made to insure the proper publication of the contents of consular communications.

In the first instance, these were transmitted to certain chambers of commerce, and after being returned to the foreign office, remained open to the inspection of any person who wished to consult them. Experience showed, however, the inefficacy of this system, inasmuch as the persons chiefly interested remained practically ignorant of such reports having been received.

A change of system therefore became necessary, and the plan was adopted of publishing consular reports in the official Gazette. From this step considerable advantages accrued, enterprises in distant countries deriving no little assistance from the information afforded in these publications.

Nevertheless the object proposed was not completely attained. The *Moniteur* is chiefly read by officials only. It does not find its way into the factories or commercial houses of Belgium. On the other hand, these consular reports are rarely reproduced by the newspapers which are read by the commercial classes.

Something remained to be done.

In 1855 a final step was taken by the Government, by which it was decided that for the future, in addition to the publication of consular reports when of sufficient importance in the official Gazette, they should also be collected in a separate publication, volumes of which should appear weekly.

This plan was at once carried out, a sufficient number of subscribers being promptly forthcoming from among the leading manufacturers and merchants and the chambers of commerce to cover the expenses of the undertaking. The first number of these volumes was published on the 1st of January, 1856. This double issue of consular reports, viz., in the official Gazette and in the separate publication above referred to, was continued till the year 1865, when the general circulation obtained by the latter made it unnecessary to publish any further the reports in the Gazette.

Thanks to this publicity, the information transmitted by Belgian consuls abroad is brought immediately to the knowledge of those whom it especially interests.

As a general rule consular reports are transmitted through the Belgian legations under flying seal to the Belgian minister for foreign affairs. But in cases of urgency consular agents are instructed to communicate directly with the foreign office at

home. Private individuals requiring special information respecting the state of foreign markets, the manner of transacting business abroad, the kind of goods in demand, &c., may apply directly by letter to their consuls, who are empowered to communicate such intelligence to the applicant.

*Assistance rendered to exporters and manufacturers by allowing exporters to use consuls as agents.*

With regard to this subject it is necessary to make a distinction between the two separate categories of agents which compose the Belgian consular body. There are (1) consular agents who are paid by the state, and are not allowed to take any private part in any commercial undertaking; and there are (2) unpaid consular agents who, as a rule, are chosen from among the leading men of business—Belgian, where possible—resident in the various commercial countries abroad. The latter are, of course, at liberty to engage in commerce, and are free to become the agents of Belgian and of foreign exporters. But the relations into which they enter in this manner are of an absolutely private nature, and in no way involve responsibility on the part of the Government.

BROOKE BOOTHBY.

BRUSSELS, May 9, 1885.

### No. 37.

*Mr. Monson to the Marquis of Salisbury.*—(Received January 11.)

COPENHAGEN, January 8, 1886.

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It is not at the great courts of Europe, nor even at the less important capitals of long-civilized countries, that such considerations are of moment. But among the rising nationalities, which even only a few years ago might justly be called semi-barbarous, and among those sparsely populated and imperfectly organized republics of the New World, where English capital is greedily sought and English enterprise so extensively depended upon for the development of otherwise inaccessible resources, the official representative of England would, in my opinion, be exposed to the danger of a substantial diminution of his prestige and character, with the public certainly, and with the Government to which he is accredited almost inevitably, were it seen that he admitted as warrant for diplomatic action the invocations of his official patronage with which he would be immediately overwhelmed by large numbers of his countrymen. In the east of Europe and in South America it is but too notorious that the standard of morality, alike political and commercial, is regulated by considerations repudiated as discreditable by the professors of an older and higher civilization.

It is true that the diplomatic representatives of great European powers do occasionally, as I myself had occasion to see, depart in favor of their compatriots from the rule of "abstention" prescribed to them by tradition, if not by superior order. But in every such instance interested motives have infallibly been ascribed to the deviation. The profession of politics in the countries to which I allude is invariably a lucrative one. Place and power are regarded almost exclusively as opportunities for self-enrichment, and are sought after, not for patriotic motives, but as means to amass a fortune. In those countries every concession to foreign capitalists, foreign companies, foreign syndicates, is made a matter of pecuniary bargaining. All speculations and enterprises, railways, banks, harbor schemes, mines, land concessions, taken in hand by foreigners, depend for their preliminary success upon the

readiness of the promoters to bribe the wire-pullers of the Government. Commercial houses seeking contracts, or simply desirous of increasing their ordinary operations, are driven to have recourse to the same measures. Individuals or associations who have wrongs to redress or claims to assert can only hope to succeed by paying blackmail to officials; and when such cases are taken up and carried to a successful issue by diplomatic agents, the latter can never escape suspicion of having received a share of the plunder. My own experience of the difficulty, I might almost say the impossibility of successful interference, under instructions from Her Majesty's Government on behalf of my countrymen in South America, satisfies me that I am making no inequitable charge against Government officials in the countries with which I am acquainted; while I can recall several signal instances of very dubious claims, involving the payment of large sums of money, which have been countenanced and actively supported by my foreign colleagues, whose success in enforcing them has brought upon themselves the stigma of having undertaken the prosecution of illegitimate demands against a foreign Government for solid pecuniary advantages to their own pocket.

In such countries as those to which I refer, and which are naturally regarded as very promising fields for the extension of British commerce and British enterprise, I am convinced that it would require extreme discretion on the part of our diplomatists to avoid the imputation of corrupt and interested motives in the event of their departure from the policy of "abstention" hitherto almost invariably pursued. I have seen enough, and heard enough, of the proceedings of my countrymen to enable me to speak on this point with authority. I know that a British minister is liable to constant solicitation from companies, firms, and individual merchants, who are desirous of securing his good offices with the Government and the local authorities in furtherance of their schemes. I know that pecuniary advantages to be given him in return for his good word and his influence are hinted at by those solicitous of his protection; and I feel sure that the immunity which he enjoys from suspicion on the part of the public and the local Government is due, almost exclusively, to the attitude of "abstention" which it is now sought to modify. It would, of course, be more satisfactory to be able to say that the fact of his being a British official suffices to maintain his character for integrity; but when, unhappily, the contagion of example has so tainted the entire commercial community, that British merchants and British companies resort as a matter of course to systematic smuggling, bribery, and other illicit practices, it would be too much to expect that the general public, either native or foreign, would give credence to the assertions of immaculate conduct made by an individual member of a nationality so deeply compromised.

The subject is so unsavory and so mortifying to national pride as to deter any one from a desire to enlarge upon it. I trust that the allusions I have made may be forgiven to me in view of the importance of the question which has been raised in an influential organ of public opinion. Should Her Majesty's Government decide upon taking any action in consequence of the raising of that question, I cannot doubt but that due attention will be given to the view which I have ventured to put forward, and which must be shared by numbers of my colleagues. Means may very possibly be found of devising a plan by which the legitimate demands of British trade may fairly be met without entailing upon our diplomatic service the risks of such a humiliation as I have seen become the portion of the diplomatic agents of other countries. The members of our service have never shown themselves behindhand

in advancing the general interests of British trade. They will be equally ready, I am sure, to lend their aid in promoting the individual commercial efforts of their countrymen abroad, so long and so far as they can do so without compromising their utility as the incorruptible servants of Her Majesty and the representatives of the honor and integrity of the British nation.

I have, &c.,

EDMUND MONSON.

No. 41.

*Memorandum by Mr. J. G. Kennedy, secretary of embassy at Rome.*

Commercial museums, under Government supervision and patronage, exist at Turin and Milan, *but are not yet* open to the public. They will contain specimens of goods required in foreign countries.

2. Consular reports are published in small volumes, like our secretaries' reports, and also in the weekly bulletins or journal published by the ministry of commerce. They contain varied information.

3. No commercial attachés have as yet been appointed, because the Chamber of Deputies has not yet sanctioned the sum of 40,000 francs (£1,600) asked for by the minister of commerce.

4. No special, only general, instructions are issued to consuls respecting "pushing of trade."

5. Consuls are forbidden to act as agents for exporters.

As regards general official action, my report gives information. The Government also puts pressure on railway companies to reduce rates in favor of exporters.

I will inquire at foreign office respecting instructions to consuls, and write again if necessary.

J. G. KENNEDY.

ROME, March 1, 1886.

No. 42.

*Sir E. Malet to the Earl of Rosebery.*

BERLIN, March 3, 1886.

MY LORD: In compliance with instructions contained in Earl Granville's despatch to Mr. Scott of the 11th March, 1885, I have the honor to report:

1. That the only commercial museum to which the Prussian Government gives a yearly money aid is the Kunst-Gewerbe-Museum (Museum of Art Industry) of Berlin. The amount of the grant is 107,000 marks, or about 5,000*l.*; the remaining commercial museums in this country are supported by private contributions and aids from the municipalities and local chambers of commerce.

2. The imperial consuls are instructed and encouraged to send home occasional reports containing as full and accurate information as they can obtain in regard to the state of trade and industry in their districts, and particularly in regard to German trade, and to give timely notice of any opening for its extension, or for the establishment of any new trade between Germany and the countries where they reside.



These reports are sent, in the first instance, to the imperial foreign office, where they are examined, and then passed on to the department of the Reichs-Amt des Innern, the home office of the Empire, in order that any information which may be found in them deserving of interest may be extracted from them, and published in the "Handels-Archiv," for the benefit of the trading and industrial community at large.

This publication appears monthly, and I have the honor to inclose, as a specimen, a copy of the December number of 1885.

3. German consuls are strictly prohibited from acting in any way as agents for exporting firms.

I have, &c.,

EDWARD B. MALET.

No. 44.

*Sir R. Morier to the Earl of Rosebery.*—(Received April 26.)

[Extract.]

ST. PETERSBURG, April 22, 1886.

I am altogether at a loss as to the way in which I should deal with the case of Messrs. ———, recommended to my care in your lordship's dispatch of the 3d instant.

It would appear from the correspondence inclosed in that dispatch that these gentlemen have sent in tenders for a tramway at Lodz, in Russian Poland, that their tender has been selected with one other as to the two to be adjudicated upon at St. Petersburg, and that the matter is running its usual course here. No complaint is made of the action of the St. Petersburg authorities, nor is it alleged that the applicants have been refused justice or been subjected to treatment internationally cognizable on the ground of comity. Nevertheless, the parties expect that Her Majesty's ambassador shall be instructed to watch over their interests with, I presume, concomitant prayers to be offered to the Imperial Government.

On being called upon by the foreign office to state more particularly in what their interests consist, they reply that they are those of British enterprise and British capital, and they add that they are given to understand that the competing tender is being watched by the representatives of the country of the tenderer, whatever that country may be.

It appears, therefore, that, in the opinion of these gentlemen, it is, first, sufficient for a commercial enterprise in a foreign country to be a *bona fide* British one to secure for it the watchful care and fostering protection of the Queen's representative. Second, that where there is a suspicion that the representatives of another country, even though the name of that country is unknown, are taking steps, the nature of which is equally unknown, to further the interests of a private commercial firm of that country, it is the duty of a British representative without further ado to enter into an international competition with such foreign representatives in favor of his country.

I am convinced that your lordship will agree with me that the very greatest caution should be used in dealing with a case of this kind, lest a precedent be established which might prove a fatal embarrassment in

the future both to the foreign office and to Her Majesty's ambassadors and ministers abroad.

Take Russia, for instance; British capital and enterprise have more or less established themselves throughout the Empire independently of the large establishments of old standing here and at Moscow. They have done so on the principle which has till now obtained that capital embarked abroad must yield the profits necessary to cover the risk involved in the adventure, a risk which is greater or smaller according to the country in which the capital is invested.

Now, no rule has been more absolutely insisted upon in the dealings of Her Majesty's missions abroad than this one, that, unless there is denial of justice, or treatment of British subjects engaged in mercantile transactions contrary to treaties or to the spirit of treaties, no assistance shall be rendered to further private interests.

Were I, therefore, to act, at the instance of Messrs. ———, on the principle put forward by them, I should, by one stroke of the pen, become, so to speak, the guardian and trustee of every private firm throughout the length and breadth of Russia.

As regards the entering into competition with foreign representatives in furthering the interests of private firms, my long experience in commercial transactions of international interest has furnished me with the data necessary to form a correct judgment on the subject, and I must unhesitatingly declare that, apart from the very great harm that I believe would result to our political position from such official competition, I believe we should enter such a race without any of the conditions necessary to secure a chance of success.

In these circumstances, I hope you will approve of my not having acted in conformity with Messrs. ———'s wishes without first consulting your lordship, and I would suggest that those gentlemen be informed that, the case having been referred to Her Majesty's ambassador at St. Petersburg, he had given it his best consideration, but had been unable, with the very limited information furnished to him, and in ignorance of the nationality of the competing firm, to determine whether it was a case which called for legitimate interference on his part.

No. 45.

*Mr. O'Connor to the Earl of Rosebery.*—(Received May 3.)

[Extract.]

PEKING, March 6, 1886.

The position of Her Majesty's consuls in China, both *vis-à-vis* to British commerce and to their foreign colleagues, is very different from that of similar officers in Europe, and I have, while in charge, always gone on the principle that to be efficient and to render the best service within their power to British commerce they ought not only to report commercial matters to the foreign office and to Her Majesty's legation, but also be on the lookout to show British merchants and traders when and how to take advantage of commercial openings, and, if necessary, to introduce British commercial agents willingly, yet with just discrimination, to the local authorities.

No. 46.

*Sir E. Thornton to the Earl of Rosebery.*—(Received May 5.)

[Extract.]

CONSTANTINOPLE, May 1, 1886.

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Whilst upon this subject, I may add that since my arrival complaints, verbal and in writing, have been made of the scant protection given by Her Majesty's diplomatic and consular officers to British subjects.

A leading merchant of this city lately called on me and used very plain language in this sense, especially in comparison with the protection enjoyed by German subjects. I asked him to give me an instance. He put forward what he considered to be the strongest proof of his assertion. He said that English merchants would sell their goods at one month's credit on much easier terms than German merchants would sell on six months' credit. The natives, however, always preferred to deal with the latter, who dared to give such a long credit, because, in the event of their debtors not paying for the goods purchased, the German consul would interfere to force them to pay their debts, and, in fact, would act as the agent of the merchants. Englishmen did not venture to give the same credit, because they would not receive the same support from Her Majesty's consuls, and, therefore, lost much of the custom of the natives. I doubt whether Her Majesty's Government would consider it right that they should be employed in such a way.

I have within the last few days received a letter from a firm of English merchants residing at Smyrna complaining of the vexatious conduct of the customs authorities at that port with regard to double duties being imposed, in several instances, upon excess of coals above the manifest, as measured by the custom-house officers.

As the measures taken by those authorities really appear to be unnecessarily severe, I have addressed a note upon the subject to Saïd Pasha.

At the end of the letter it is insinuated that proper assistance is not afforded by Her Majesty's embassy; they say that "if such aid and assistance is to be a reality, and not a mere name—the vain shadow of a shade—then, surely, it is not to be invoked in vain when called upon to save the very existence of a trade which, sorely hampered by wanton interference and unwarranted exaction, still remains in English hands, but can only so remain if protected by the powerful assistance and co-operation of the embassy."

Yet, notwithstanding this insinuation, it is admitted that, in one instance of the payment of double duties, they succeeded, "by the intervention of the British embassy, in getting the money returned."

Englishmen complain that in Turkey Germans are getting the advantage of them in point of trade, and attribute it to the want of assistance from Her Majesty's diplomatic and consular officers. For many years past, during my residence on the River Plate, Brazil, and the United States, I have been painfully impressed by the conviction that English merchants are indeed being driven out of the field by Germans, but that the latter attain this superiority, not by protection from their authorities, but by their own unaided and independent energy, by the greater economy of their establishments, and by downright hard work on the part of both chiefs and subalterns.

## No. 47.

*The Earl of Rosebery to Mr. O'Connor.*

[Extract.]

FOREIGN OFFICE, May 6, 1886.

I stated to the Marquis Tsêng that the convention,\* of which we had to-day exchanged the ratifications, was a proof of our good-will, inasmuch as it added a large sum to the Chinese revenue, and I hoped that, if China should be opened to commercial enterprise, the claims of this country would not be forgotten. I was against Governments putting pressure on other Governments to obtain commercial advantages in a narrow sense; all that we desired was a fair field and no favor.

The Marquis Tsêng fully concurred in this view, and said that he knew that whatever England wished in China was for the good of China as well as for her own, and that he would always bear this in mind in relation to this question.

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No. 49.

*Sir S. St. John to the Earl of Rosebery.*—(Received May 11.)

MEXICO, April 22, 1886.

MY LORD: I would mention to your lordship that one of the principal causes of the inferior commercial position held by the English in this and other countries is the practice of the British steam navigation companies employing foreigners as agents. In Vera Cruz the three English companies employ Germans or Mexicans, who can feel but a very lukewarm interest either in the success of the companies or in the extension of British trade. In fact, the Germans are our most active competitors in every mercantile transaction, and should not receive the additional advantage of having almost a monopoly of steamboat agencies.

There can be no doubt, however, that up to the present time the English commercial community have shown the utmost apathy and indifference to the trade of this country, and have left to the Germans, French, and Spaniards the management of a commerce, a fair share of which would fall to them if they would show the same qualities of thrift and industry which have distinguished their competitors.

In the course of a very long experience I have noted that the average English commercial man of the present day is unfit to compete with the thrifty and industrious German. The former is bent on the pursuit of pleasure, whilst the latter gives himself no leisure until his future is assured.

I have, &c.,

SPENSER ST. JOHN.

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\* See "China No. 3 (1886)."

No. 52.

*Sir F. Plunkett to the Earl of Rosebery.*—(Received May 27.)

TOKIO, April 23, 1886.

MY LORD: I have the honor to acknowledge the receipt of your lordship's dispatch of the 25th February, covering copies of correspondence which has passed between your lordship's department and the London Chamber of Commerce in regard to the alleged inadequacy of the support given by Her Majesty's diplomatic and consular officers abroad to the furtherance of British commercial interests.

It seems to me that the London Chamber of Commerce has a mistaken appreciation of the support generally given by foreign agents to their countrymen. This support is often more partial to certain firms than general to all their own nation. I believe that our merchants themselves would be the first to complain if I, for instance, were to show any [such] preference for one English firm at the expense of the rest, and yet there is no doubt it is far more effectual to push the interests of one individual or group than to further equally and with that impartiality, which Englishmen expect of their own Government, the interests of a large number of merchants, many of whose interests are often themselves conflicting.

I had the honor of sending your lordship my dispatch of the 8th instant some time before receiving your dispatch under reply.

I beg [again] to express the opinion that a sudden change in the policy hitherto followed by England in this respect is not advisable. I believe the foreign Governments who now have recourse to these methods will not find them successful for long, and that we shall gain much more by continuing in our present course, viz, combat to the best of our power any case we may discover where foreign agents are endeavoring to undermine our commercial connections, or working otherwise to the detriment of our merchants; but we should hesitate before imitating the example set by some foreign Governments, of directly pushing individual speculations at the expense often of other merchants of the same nationality.

It is well nigh impossible to give this individual support, which, however, is undoubtedly the most effectual, without exposing Her Majesty's diplomatic and consular officers to the danger of being, at some given moment, suspected of improper motives for assisting one firm more than some other perhaps of equal standing.

I have, &c.,

F. R. PLUNKETT.

No. 54.

*Memorandum by Mr. Constantine Phipps, secretary of embassy at Vienna.*

1. The Austrian Government have no commercial attachés.

2. The Austrian consular officers have to furnish annual reports very similar to our own. These are not laid before Parliament, but are published in brochures, several together, as they arrive, at Government expense, by the foreign office.

Certain consuls have to furnish quarterly and even monthly reports when instructed (in certain posts) to do so. These latter are published

in a paper (weekly), called the *Austria*, which is issued under the auspices of the ministry of commerce, with a subvention from Government. The *Austria* also makes extracts, when desirable, from the annual reports, and publishes information as to foreign tariffs, navigation laws, &c.

The following commercial newspapers, also giving extracts of the consular reports, appear in Austria:

The *Volkswirtschaftliche Wochenschrift*; the *Kammer*, with a supplement termed *Der Consul*.

A new paper has also lately been published termed the *Handels-Museum*, issued by the *Orientalische Museum*, which is now to be converted into a *Handels museum* or commercial museum, where samples can be seen.

There is no journal like the French *Annales du Commerce Extérieur*.

3. The *Oriental museum* above referred to has exhibited samples of articles likely to find a sale in the East. It has hitherto enjoyed a subvention of about 800*l.* per annum, but a committee under Archduke Louis Victor and Count Coronini are hoping to have it increased to about 3,000*l.* per annum and make it a general commercial museum, where samples of all sorts can be seen.

4. Consuls are not allowed to act as agents, but they reply to questions as to solvability of foreign firms, or as to the demands in foreign markets when they receive applications to such effect.

They also regularly report (in certain-neighboring countries only) commercial failures or bankruptcies.

Austrian consuls pass through the Government commercial school of commerce, termed the *Orientalische Akademi*, which is not, as its name would imply, restricted to oriental subjects or languages.

Out of ten Austrian consuls who receive appointments, probably nine come from it.

It does not appear that Austria does much officially to push her trade by direct interference. A chamber of commerce at Alexandria was organized a few months ago to push Austrian trade there. Recently a young consul, selected on account of his capacities and intelligence, was sent in a man-of-war which was cruising in Australian and Eastern waters in order that he should report on the markets for Austrian productions.

I see no disposition at the Austrian foreign office to promote interference in matters of detail in developing foreign trade which the Government favors by construction of railways, constantly increasing subventions to steamboat companies, &c. There is, however, a very strong agitation on foot to push foreign trade by means of the "*Oriental and Commercial Museum*," to which I have referred. How far the Government will be inclined to support it is doubtful. A general bureau for commercial information will, it is intended, be comprised in it.

Their secretaries of legation used to write reports, but have ceased for some years to do so.

Amongst the steps officially taken by the Hungarian Government to promote foreign trade, there is to be quoted in first instance the—

*Railway tariff policy* of the Government, one of the main objects and tendency of which is to regulate the tariff of freights in a way that the foreign trade of the country may be promoted and developed.

The Government also contributes to the *Lloyd* (Austro-Hungarian) *Navigation Company* at Trieste, and to the

*Adria Steam Navigation Company* in Fiume, with a yearly amount paid as subvention.

## HANDELS MUSEUM.

*Object.*—The chief object of the Handels Museum is the promotion of foreign trade.

The Handels Museum will have three divisions—

I. *Collections.*

(a) Home collection.

(b) Foreign collection (especially Eastern).

(1) Manufactures which may be exported to the East.

(2) Oriental manufactures, in order to show how to manufacture for the Eastern export.

(3) Articles of the East which may serve for the home manufacture.

II. *Bureau and Intelligence Department.*

III. *Library and Periodical Reports.*

To the maintenance and management of the Handels Museum the following corporations will contribute:

(1) The Ministry of Commerce.

(2) The Industrial Society.

(3) The Agricultural Society.

(4) The Forest Society.

(5) The Buda-Pesth Commercial Chamber.

(6) The Society of Merchants and Manufacturers.

(7) The Commercial Associations.

(8) The Buda Pesth Lloyd Society.

(9) The Hungarian Commercial Club.

(10) The Commercial Academy (School).

The board of directors will be formed in a way that six members will be appointed by the ministry of commerce; and, besides, each of the above societies name two members.

This board of directors elects its own president and vice-president, to be ratified by the ministry of commerce.

The chief director of the museum is to be appointed by the minister of commerce.

The foregoing shows that the Handels Museum will be a *public undertaking*, and that the greatest influence therein is preserved to the ministry of commerce.

Besides the establishment of pattern museums and "bureaux of commercial information," I may mention among the various measures adopted for promoting the foreign commerce of Austria-Hungary one which I believe will be interesting to Her Majesty's Government, viz, the organization of the Oriental Academy for the education of candidates for the diplomatic and consular services, more especially in the East, where most attention is directed to the export trade.

The Oriental Academy is situated in the same building with the renowned "Theresiaum," an imperial upper class educational establishment, but the Oriental Academy itself is under the control of the ministry of foreign affairs, to which all applications for admission must be addressed.

The academical course extends over a period of five years, and embraces education of the most extensive character.

The legal education is specially comprehensive, and few lawyers are likely to be conversant with the following legal knowledge required from the students:

Civil law, commercial law, the law of exchange, civil procedure, criminal law and procedure—in all these cases, not only Austrian but Hungarian. Diplomatic history, the law of nations, consular law, political

economy, the science of finance, statistics, Austrian local government laws, Turkish history and local government. A knowledge of articles entering into commerce as well as of trade laws is also inculcated.

Military geography and tactical science is taught, as well as riding and swimming.

In point of knowledge of foreign languages, the students who acquire those enumerated below are likely to be rivals of Mezzofanti: "Turkish, Arabic, Persian, Hungarian, French, Italian, English, Russian, modern Greek, Servian"—all these have to be learned.

The conditions of admission are Austrian or Hungarian citizenship, complete knowledge of the German and French languages, and a cursory knowledge of at least one of the languages spoken in the monarchy; also the possession of a certificate of maturity from one of the gymnasium schools. The candidates must pass an admission examination, *viva voce*, as regards knowledge of universal history from the Peace of Westphalia up to the Congress of Paris in 1856, while they have to write a German theme on a given subject, and to make translations from French into German, and *vice versa*.

The ministry of foreign affairs decides by means of a delegate—one of its principal officials—what candidates are to be accepted.

The annual payment for the students amounts to 1,300*fl.* (about 100 guineas). They must be provided with a certain outfit on entering the establishment, but during their residence all other expenses, even of clothing (uniform), are defrayed.

The students who, after the five years' course of instruction, have achieved an "exhibition" ("stiftplatz"), have a claim to the posts of "Elevés Consulaires"; those, however, who do not succeed in qualifying for one may obtain appointments as vacancies occur.

VIENNA, June 23, 1886.

#### IV.—CIRCULAR DISPATCH TO HER MAJESTY'S CONSULS ABROAD, WITH THEIR REPLIES THERETO.

No. 55.

*Circular addressed to certain of Her Majesty's consuls abroad.*

FOREIGN OFFICE, April 9, 1886.

SIR: You are probably aware, from recent statements in newspapers, that the subject of the assistance which has been rendered by Her Majesty's consular officers to British trade abroad, and whether in the future greater aid could be afforded in this respect, has lately been much discussed in this country. I am directed by the Earl of Rosebery to say that he would be glad to receive any observations or suggestions which you may have to offer as to greater assistance which Her Majesty's consuls could usefully render to British commercial interests; and as to the proper limits, in your opinion, of their action, generally, in questions of trade, or on behalf of British traders.

Your reply to this dispatch should be sent in as soon as possible.

I am, &c.,

J. BRYCE.



[Annex.—Extract from Consul-General Bernal's commercial report for 1885.]

It is, I think, agreed on all hands that every possible means should be taken to push and foster our trade, and I have seen many suggestions made to that effect. Among others, it has been proposed that consular officers should become a kind of general agents for this purpose, have samples of goods of all sorts, &c., sent them for exhibit, and should endeavor to bring them to the notice of the merchants and dealers of their place of residence; but a little reflection will show that such a plan would be both impracticable and impolitic. Not only are consular officers without the technical knowledge required for the work, but they have neither, from their position and the many varied duties they have to perform, the time, the means, nor the space to undertake it. Even were this otherwise, the consulate would either be so important a one that the consul's whole time would be taken up attending to its ordinary duties, or would be of so little importance that there would be hardly any opening for our trade. Havre having become more of a place of transit than a center of distribution, there is not as much to be done in pushing our trade as formerly; but I have been surprised to find, as far as I can learn, how rarely a commercial traveler comes here from England. I cannot help thinking this is a bad policy, and that there must be some branches of business in which an intelligent traveler, speaking the language (this last is most essential), might do well. In agricultural machinery we have been, I am told, quite ousted here by the Americans; while in cutlery, in which we formerly did a good business, there is now hardly anything done by us, partly owing to the pressure of the French tariff, and partly to the improvement made by the French in certain classes of goods.

I periodically receive a number of trade circulars, illustrated catalogues, &c., from England, sent me doubtless in the hope that I may be able to bring them to the notice of persons interested in the different articles therein set forth. I have, however, no means of doing this other than by either passing them on to the reading-room at the Bourse, or by giving them to one or two firms who, I think, may care to see them. I am afraid that neither of these measures is productive of much benefit, and I think some more active course of proceeding is required if our trade is to be pushed. Among various projects mooted I have observed that of floating exhibitions to visit various ports in turn. This would, doubtless, be of some good in distant countries; but it would, I think, be neither thorough nor of permanent benefit. I cannot help being of opinion that a better plan would be to have, in certain well-chosen centers in foreign countries, fixed exhibitions, or depots of samples, and models of British manufactures, &c., where people could see for themselves, without any charge, what we had to offer. The expenses would have to be defrayed out of a fund contributed to by members of an association formed for the purpose. The two essential points of management would be to take care that those persons who were placed in charge should be thoroughly competent to explain the various details, &c., of the exhibits, and that in marking the prices the actual cost and the duty should be separately given. One thing is certain, that in these days of fierce and energetic foreign competition, backed up by protection, it is quite useless to sit quietly in a counting-house and expect customers to drop in of their own accord.

## No. 57.

*Consul Inglis to the Earl of Rosebery.*—(Received April 19.)

LEGHORN, April 14, 1886.

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If a larger proportion of the requirements of consumers in this country is now supplied from Germany and Austria, I believe it may be traced in a great measure to the energy of their commercial travelers. There are also a considerable number of German houses here, in many instances started by young men who came here a few years back as employés. They are satisfied with small profits, and live with the utmost thrift. With regard to the development of native manufactures another point is also worthy of notice, and was set forth by Mr. Stephen Mason, of Glasgow, in a paper annexed to the first report of the commission on trade depression. It is that large quantities of spinning and weaving machinery have been imported here from England, and that in many instances the same class of machines are run twenty-two hours per day against nine hours in England, by two sets of relays, working day and night. This is the case at the cotton reeling works of Messrs. Niemach, near Lucca, which have been referred to in a former report from this consulate.

I have, &amp;c.,

A. P. INGLIS.

## No. 58.

*Consul Ward to the Earl of Rosebery.*—(Received April 20.)

BORDEAUX, April 16, 1886.

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It would, according to my opinion, certainly be of greater advantage to those interested in the annual consular reports, as also in subjects specially reported on upon other occasions, if it were found possible to publish all such reports (at the earliest possible date) in the form of a periodical publication, issued monthly or oftener; and it would further be of advantage if such publications could be regularly supplied to Her Majesty's consulates, where all British subjects interested in such matters might peruse them if they desired.

The preparation of the annual commercial reports, if undertaken with care, is generally, and of course more especially in more important ports and places, a work requiring much time and labor; and, considering the multifarious and often onerous duties, as well as the necessarily small staff of assistants at the more important of Her Majesty's consulates, I humbly submit to your lordship that it would be hardly possible for most of Her Majesty's consuls to send periodical reports of a voluminous nature oftener than once a year. But it would, I believe, be of advantage to British commercial interests, as well as to the consuls themselves in furnishing these reports, if our chambers of commerce and shipping and other commercial bodies would from time to time point out, either by communicating directly with Her Majesty's consuls or by addressing your lordship's office, any partic-

ular subjects which they might desire to have noticed or dwelt upon at greater length in these annual reports, or upon which they might wish to be furnished with special reports by Her Majesty's consuls.

2. With regard, secondly, to the assistance to be rendered by other means by Her Majesty's consuls to British traders, it seems to me to be a well-established rule (which I beg to observe is also a leading principle in the consular services of other countries, such as Germany and the United States of America), that Her Majesty's consuls cannot act as private agents for British firms or associations or for individuals, and that any deviation from this rule would certainly carry with it disadvantages and prejudicial effects both for the interests of the public service and for consuls themselves, and also for British commercial interests as a whole.

That, however, on the other hand, Her Majesty's consuls can find opportunities of rendering themselves useful to British traders in many ways, without deviating from this rule, appears to me equally evident. For having had the honor of holding consular posts in various parts of the world for more than twenty years, I can myself humbly testify to the considerable number of cases in which I alone have been able to render services to British firms or individual traders, both by information or advice imparted either in the way of correspondence or of personal interviews, as also on some occasions by my intercession with the local authorities, or by other kinds of assistance, at this and other ports where I have been resident.

In this respect it would seem to me that the general instructions given by the foreign office to Her Majesty's consular officers, viz, "to promote the lawful trade of Great Britain by every fair and proper means, and to uphold the rights and privileges of British merchants," are to all intents sufficient, and no fresh instructions on this subject could enhance their meaning. Guided by the spirit and the letter of these instructions, consuls who are really desirous of rendering themselves useful to British commercial interests will at all times afford every assistance that can reasonably be expected from representatives of Her Majesty's Government by British traders. It is perhaps needless to add that the value of such assistance must of course depend, to a considerable degree, upon the intelligence and individual character, as well as of the experience, of the consular officer. But even the most intelligent and experienced consuls cannot be expected to have the same knowledge of commercial affairs as merchants themselves, and no assistance which Her Majesty's consuls are able to render to British commercial interests can, in fact, according to my humble view, make up for the want of initiative and individual efforts and spirit of enterprise on the part of British traders themselves; for it is these characteristics which have been the chief promoters of British commerce all over the world, and which will, it is to be hoped, continue to actuate our commercial classes, whilst those of many other countries rely on Government assistance in its various forms.

I would finally beg leave to observe that the closer touch desired between Her Majesty's consuls and British firms at home (referred to in annex 3 of Mr. Bryce's circular), as well as more frequent opportunities for consuls to visit our commercial, manufacturing, and shipping districts, would certainly be of advantage to all concerned; but the possibility of carrying this desire into practical effect—that is to say, of Her Majesty's consuls being able, from time to time, to make such visits, and to be brought into personal contact with representatives of our commerce and industry at home—must, I humbly presume, depend

chiefly upon whether your lordship might think fit to grant extended leave of absence and pecuniary allowances for such purposes to Her Majesty's consuls.

I have, &c.,

WILLIAM WARD.

No. 59.

*Consul Bidwell to the Earl of Rosebery.*—(Received April 27.)

MALAGA, April 21, 1886.

MY LORD: In obedience to the instructions contained in Mr. Bryce's circular dispatch, marked "commercial," of the 9th instant, I have the honor to submit to your lordship the inclosed report relative to the greater aid which it is desired should be afforded by Her Majesty's consular officers to British commercial interests.

I have, &c.,

CHARLES T. BIDWELL.

[Inclosure in No. 59.—Report by Consul Bidwell.]

Passing to the letter from Sir J. Behrens, it also would appear that there would be no great difficulty, under certain conditions, in carrying out the suggestions made by this gentleman, as far as the information required is obtainable by the consul; many of the subjects indicated being also already considered and treated of by Her Majesty's consuls in their commercial reports.

With regard to the industrial museums referred to by Sir J. Behrens, it is thought that they would probably be very useful as showing the wants of foreign people. It may be observed, however, that there are two ways of introducing trade in a foreign country: one by meeting the ascertained requirements of a community, and endeavoring to supply them, and another by the introduction of new and improved classes of goods. The persons accustomed to coarse clothing, springless carts, a sheath knife, and a wooden spoon will probably never employ the more modern appliances unless they first see them. In the writer's dispatch of the 18th ultimo, a suggestion was submitted for the establishment abroad, in connection with Her Majesty's consulates, of sample and specimen rooms of British manufactures and goods, and it is submitted that this suggestion, if it should not meet with the disapproval of the secretary of state, may be brought under the consideration of the Chambers of Commerce.

The suggestion as to a periodical publication of reports and notices, &c., appears also to be an excellent one; but it is doubted whether a monthly or fortnightly issue would not be more practical than a weekly one.

With respect to Mr. C. E. Bonsfield's letter to Mr. Kennedy, it need only be added that the suggestions contained therein appear to be quite practicable and very much to the point.

The suggestion in particular that Her Majesty's consuls should be invited to visit commercial centers at home appears to be a very useful one; on the other hand, it is thought that consuls should be encouraged to travel in their own district for the purpose of acquiring information, since unpaid British consular agents sometimes lack both time and means for preparing commercial reports.

In order to carry out efficiently the suggestions contained in this correspondence, and to meet the apparent views of the commercial community at home in regard to the assistance in the promotion of trade to be rendered by Her Majesty's consuls, it would doubtless be necessary to relax in some measure the rules at present in force relative to not incurring expenses without the special sanction, in each case, of the secretary of state. It is illusory to suppose that underpaid foreign Government officials and clerks would care to furnish British consular officers with such early information as they may properly afford regarding changes in tariff laws, trade statistics, &c., without remuneration, whereas a small fee judiciously given at the time acts as the most powerful lever, if not the only one, for the purpose; but if Her Majesty's consuls are required to apply in each case for special sanction for making the dis-

bursements, the main object in view, as to early information, would of course be frustrated. It is suggested, therefore, that discretion, within prescribed limits as to amount, might be vested in Her Majesty's consuls in respect to these matters, similar to that now reposed in them respecting telegrams, and that disbursements under these headings should be authorized and charged in the consul's accounts on his certificate. The following extract from a letter from a vice-consul at an important post in this district will serve to show the difficulty that now arises in regard to this matter:

"January 14, 1886.—In order to fill up conscientiously the forms annexed" (foreign office circular dispatch of the 22d December, 1885), "information must be obtained from some official source, and as this will involve a considerable amount of trouble, and will also take time, it will only be fair that the official supplying this information should be remunerated for his labor. I have therefore to ask you if the Government is willing to defray such expenses, and, in the case of its not being willing to do so, I must ask you to point out to me from what sources I shall be able to obtain the desired information."

And with regard to sending home promptly, for periodical publication, translations of foreign tariffs and notices and laws relating to trade and industry, called for in the suggestions under consideration, it must be borne in mind that in all the more important consulates the clerical staff is generally fully occupied with the regular work of the office, and that transactions and reports, as a rule, can only be done when the more pressing duties connected with shipping, &c., allow it. In order, therefore, to stimulate unpaid vice-consuls and consular clerks to work in such cases at night and after the ordinary office hours, it is suggested that special extra remuneration might be granted for copying reports and translations for publication, on the scale stipulated in the new tariff of fees for such work.

Nor would it hardly be proper to require Her Majesty's consuls to provide clerk hire, and undertake without remuneration, in addition to their official duties, the particular business of merchants and traders at home. It is fair to state, however, that, in the majority of cases, the request for consular assistance is accompanied by a statement that the applicant would be willing to defray necessary expenses and pay consular fees. The difficulty which has hitherto existed as to what fees or remuneration, if any, might be properly levied for such services has, however, now been removed by the new table of fees. It is, of course, one thing to restrict a consul from engaging in mercantile pursuits, and another to debar him by too stringent regulations from aiding British merchants engaged in trading operations in his district as well as those at home. Merchants trading abroad are now in the habit of applying to Her Majesty's consuls for all kinds of information and assistance in their business, and particularly for lists of firms dealing in the goods which they are prepared to supply; and it is the practice of the writer, as far as possible, to afford such information, irrespectively, to all who may apply for it. It is believed, moreover, that Her Majesty's consuls generally are most willing to furnish merchants and traders at home with such assistance.

It is suggested, therefore, that consuls might properly be directed to undertake services of the nature referred to upon the understanding that fees provided in parts 3 and 4 of the new table of fees would be applicable in such cases, and that the commercial community should be informed accordingly. A case in point may be cited in illustration of these observations. A firm of coal exporters in England lately had a question of considerable amount with a local merchant, arising out of the charges on a consignment of coal. After fruitless attempts to arrange the difference, the English firm sent out the case to Her Majesty's consulate, with a request that a lawyer might be appointed to prosecute their claim. In view of the expense and difficulty in obtaining justice in a Spanish law court, it was suggested by the writer that it would be better to allow him to try to arrange for a compromise. After much correspondence and several interviews, the matter was satisfactorily settled by the consul. In this case the fees in the new table of fees for clerks' attendance out of office, &c., were charged and willingly paid, and they were, in fact, probably a twentieth of what a Spanish lawyer's fees would have been, with a very doubtful result.

The preceding observations may be briefly summed up as follows:

1. Her Majesty's consuls to be instructed to report on the various subjects indicated in the letters from the British iron trade association, Sir J. Behrens, Mr. Bousfield, and Mr. Sturrock, which form annexes to Mr. Bryce's circular, marked commercial, of the 9th April, 1886, and on such other matters as may from time to time be useful.

2. The reports to be published monthly, with full indices, and to be acknowledged, with observations.

3. Her Majesty's consuls to afford every assistance in their power to merchants or contractors willing to undertake business in foreign countries, within such limits as may be defined, and under such instructions as may be issued by the Secretary of State, but with due care not to promote the interests of one British subject as against another.

4. The establishment of commercial museums, as indicated by Sir J. Behrens, and consular specimen rooms abroad, as suggested by the writer.

5. Her Majesty's consuls to visit commercial centers at home, and to travel as much as possible in their own district.

6. Her Majesty's consuls to assist private firms in establishing just claims against creditors abroad, and to furnish required information generally to persons willing to pay necessary expenses and fees, and the public to be so informed.

7. Her Majesty's consuls to be allowed to pay for information promptly afforded abroad, and to charge for early copies and translations of documents sent home for publication.

MALAGA, April 21, 1886.

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No. 60.

*Memorandum by Consul Bidwell, suggesting the establishment of specimen and sample rooms for British manufactures and produce in connection with Her Majesty's consulates in foreign countries.\**

In the report which the undersigned had the honor to draw up for the Royal Commission on the Depression of Trade and Industry, certain suggestions are offered for the extension of British commerce in foreign countries, by means of a system of local agencies abroad and registry offices at home; but there is another matter to which the writer's attention has been directed by the apparent public desire for consular assistance for the promotion of British trade abroad, in regard to which it is desired to submit the following observations respecting a proposed scheme, which has in some degree been suggested by the interesting report of Mr. Kennedy and Mr. Bateman relative to commercial museums in Belgium.

As stated in the writer's report referred to above, there is no doubt that French, German, and Belgian firms derive considerable trade in foreign countries by the pains which they take to bring their manufactures under the notice of the foreign buyer and consumer, whilst it is no less apparent that many foreign houses will prefer to give their orders *via voce* rather than write to England for goods about which they are perhaps not fully informed, while the course which affords most facilities will generally be that which is adopted; everything, in fact, which tends to lessen trouble will assuredly, as regards a certain class of purchasers, facilitate the obtaining of orders; moreover, those traders and others who can not afford, or do not care, to visit the manufacturing centers at home, often remain in ignorance, to an extent little credited, as regards the best productions of the country.

The plan which it is now suggested might be usefully adopted is the establishment of specimen and sample rooms for British manufactures and goods, to be attached to and in connection with Her Majesty's consulates in the more important commercial cities in each foreign country, such establishments to be under the supervision of Her Majesty's consuls.

These rooms, it is thought, might contain samples, specimens, drawings, or models of such articles of British manufactured goods as the chambers of commerce, interested in their production, may consider it desirable to collect and send abroad for exhibition, whilst the collection of articles for the purpose by the chambers of commerce would avoid the sending out of an unnecessary repetition of the same class of goods.

The specimens might perhaps usefully comprise such goods as cotton yarns and tissues, hosiery, woollen goods, yarns and tissues, carpetings, oil-

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\* The proposal contained in this memorandum has also been embodied in Mr. Bidwell's annual Trade Report (see "Commercial No. 6, 1886").

cloth, linoleum, cloth textiles, linen yarns and textiles, jute yarns and textiles, leather goods; glass, porcelain and earthenware, stationery, saddlery, books, guns, musical instruments, preserved provisions, biscuits, chemicals, dyes, candles, soap, &c.; and plans and models, drawings and photographs of steam-ships, launches, and boats, steam-engines, machinery, carriages, pianos, furniture and heavy goods generally, of which specimens could not be conveniently sent abroad for exhibition.

It is suggested that a clerk, appointed by the consul for the purpose, should take charge of and catalogue such goods as might be sent out from time to time for permanent or temporary exhibition, and that he should be in attendance at convenient times to afford visitors information as to the cost of the articles at home and the probable expenses of carriage duty, &c., and also to place intending purchasers in connection with the manufacturers.

It is considered that the charges for clerk hire, rent, portorage, &c., of such an establishment as that indicated, at each place where it might be deemed desirable to have specimen rooms, need not be great; and on those specimens which could be kept within the prescribed limits in foreign tariffs for samples no charge for duty would be incurred. It is thought, moreover, that these charges might be borne by the respective chambers of commerce in Great Britain, who in their turn could raise the necessary funds by subscription, or fee, from such manufacturers as might desire to take part in the scheme, and send out specimens of their goods for exhibit.

The importance of showing intending purchasers where they can best supply themselves with the articles they require need not be dilated upon, and it appears to the writer that in no way, probably, could the chambers of commerce at home and Her Majesty's consuls abroad more advantageously work together for the promotion and extension of British trade in foreign countries in these times of German, French, and Belgian competition than by constantly keeping the excellence of British manufactures before foreigners, in some such way as that now briefly submitted for consideration, if a scheme of this nature should meet with the approval and sanction of Her Majesty's Government.

CHARLES T. BIDWELL.

BRITISH CONSULATE, MALAGA,  
March 18, 1886.

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No. 61.

*Consul Bonham to Earl of Rosebery.*—(Received April 27.)

BOULOGNE, April 24, 1886.

MY LORD :

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The depression in British trade is acknowledged, and there is no doubt that foreign competition is running British manufacturers very hard, but the idea that Her Majesty's consular representatives may be able, by any action of theirs, to restore the supremacy of British trade may be flattering to them, but is not practical.

The method adopted by retail purchasers abroad for procuring the goods they require has greatly altered with the improved postal and

telegraphic communications and increased facilities for transport, and I would, with deference, submit the question whether our manufacturers have sufficiently recognized these changes and adapted themselves to the altered circumstances.

Many years ago, when shopkeepers and others abroad required British goods, they obtained them through a commission merchant, generally an English one, at or near their place of residence. This firm procured and paid for the goods in England, and received payment itself in cash or bills on delivery. This was in the days before competition became so severe. I believe I am correct in stating that this style of business has greatly changed, and that now in very many countries the intervention of the commission merchant is dispensed with, and the goods are obtained direct. This has advantages for the purchaser, who saves the merchant's commission, but probably not for the manufacturer, who is often unacquainted with his client, but in his anxiety for a market supplies the goods, and frequently makes bad debts.

I think the foreign manufacturers have realized the altered situation and adapted themselves to the circumstances better than the British manufacturer, and hence arises much of their success.

I believe they employ commercial travelers to a far greater extent than British houses do. This is most advantageous, as these travelers are specially versed in the trade or business of the firm or firms they represent; they see what the special requirements are, and know which of their products are most suitable, or how they can be rendered so; they can also obtain better information as to the standing of their clients, and are less likely to make bad debts. I am therefore of opinion that the really efficacious method to be adopted by our manufacturers is for them to send abroad more commercial travelers, who should possess not merely a slight knowledge of the languages of the countries they visit, but be able to converse in them, and also be men of good education.

With regard to British consuls rendering assistance to British subjects individually in pushing their business or obtaining concessions, &c., I cannot help thinking it would be very undesirable that they should do so, except, perhaps, in exceptional cases in uncivilized countries.

If a consul received an application from a firm in England, with whom he is probably unacquainted, expressing their desire to open business relations with some firm in his vicinity, through whom they could obtain a sale of their special manufactures, how would the consul recommend Mr. A., since, should that party fail, even after the lapse of some months or years, or any dispute arise, would not the English firm at once complain of the consul for having recommended the party?

On the other hand, if there were several British merchants at the port, and the consul recommended Mr. A., would not the others at once cry out and accuse him of favoring one more than another, and make insinuations, if not direct accusations, that he did so from interested motives? Much the same would occur, and, I believe, has occurred, when the consul has recommended a lawyer. If the case was lost, the costs very heavy, or great delays took place, would the consul not be appealed to and considered responsible for these occurrences? Again, as to a consul's replying to inquiries as to the position or standing of merchants or others, I do not consider he should be called upon to do so; if he did so in one case and declined in another, it would at once raise suspicion, and I do not suppose his communication would be considered in law as privileged, and therefore he might be subjected to



prosecution if he reported unfavorably of a person's character, standing, or financial reputation.

With regard to consuls reporting more fully on trade and commercial matters generally—

It appears to me that information on many of the points mentioned in the suggestions made to your lordship is not such as could properly or easily be supplied by every consul; it relates to a whole country, and it should therefore, in my opinion, be the duty of one special officer, whether consul or commercial attaché, to supply such information for the whole country. This specially applies to the suggestions that any change of tariff, whether under consideration or already officially announced, should be at once reported. I would remark on this, is it desirable that every proposed change should be reported? Would it not be better to await to report such changes until they actually become law? Suggested alterations may be very numerous and sweeping, but it is probable that only a very small percentage are actually made. Consuls at outports would probably know nothing of these proposed changes. Then, again, laws relating to trade and industry—these are probably applicable to a whole country, and should therefore be reported upon by one official in that country.

The statistics supplied by consuls refer to their own particular port or district, and it would be very difficult for all consuls to obtain them in exactly the same form or at the same period. Consuls are dependent on the personal courtesy of the local authorities; some furnish statistics freely, whereas others do not; and the forms in which they can be obtained vary. Obtaining statistics is often a very difficult and disagreeable business, and I think I may say that in every country I have been in I have found discrepancies in the figures; they are often given as a personal favor, and it is not desirable to look a gift horse in the mouth, and if consuls are too exacting they end by getting little information or assistance.

In many countries statistical information is published by local chambers of commerce and other public bodies, but this is generally many months old; whereas in the capital statistics for the whole country are frequently published at an early date, and also give a better idea of the trade of the country than those obtained from isolated ports.

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I have, &c.,

E. W. BONHAM.

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No. 62.

*Consul-General Sanderson to the Earl of Roseberry.*—(Received April 26.)

GALATZ, April 20, 1886.

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The great competition which exists at the present day has developed what I may be permitted to describe as (1) a public want, and (2) a private desideratum.

The public want is that which is set forth in the letters received from the different chambers of commerce, the desire for more detailed information in respect of every opening that may present itself for British trade, commerce, and industry, the widest possible publicity to be given to such information in order that all may be in a position to avail them-

selves of it. But the private desideratum is that, if I may say so, of the individual members of the trading community to retain in their own hands, as long as they possibly can, any business out of which in these hard times they can make a tolerably certain profit. I conceive that instances are not wanting of individual members of a chamber of commerce being in possession of certain information respecting foreign trade to which it would not be in their interest to give the widest possible publicity, and which they would be rather sorry than otherwise to see published in a consular report. Be this as it may, commercial travelers very rarely present themselves at this consulate-general; when I was endeavoring in 1877 and 1878 to collect material for supporting reductions in the Roumanian tariff it was with the greatest difficulty that I could obtain invoices and price-lists on which to base my arguments; and latterly the great complaint that has been made in respect of the demand of the Roumanian Government for certificates of the British character of goods claiming to be admitted under the treaty stipulations has been, not the trouble or the expense, but the fact that in this way the nature of the goods shipped, and in some instances their prices, become known to people who might enter into competition in the same branch of trade. The individual interests and those of the community at large are thus in a certain measure opposed to one another: it is rather with the former than with the latter that the consul comes in contact, and these as a rule prefer to be left alone unless they ask for assistance.

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I have, &c.,

PERCY SANDERSON.

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No. 63.

*Consul Brown to the Earl of Rosebery.*—(Received April 26.)

[Extract.]

GENOA, April 22, 1886.

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I think that while our instructions as they stand, if properly understood and industriously carried out, are sufficient, it is of great advantage to us, and greatly promotes our usefulness, if our attention is from time to time called to points we should more particularly study and report upon.

It is, generally speaking, far easier to report on a subject if one starts from a basis of questions drawn up by a competent person than to form a wholly original report. The reports of the United States consuls are held up just now as a model, and I think that their undeniable merit is due to the fact that they are, for the most part, based on questions directly suggested by traders and industrials.

United States consuls make one annual report, as we do, but they are far oftener called upon for reports based on lists of questions which serve not only to elucidate the report of the moment, but to keep them alive to the sort of information most desired, and even assist in giving a useful shape to their annual and other reports. Their annual reports appear to me the least interesting and valuable of the series.

The very practical circular issued to us in December last will do much to make our reports shorter and more to the point, but the annual reports of those of us who live in countries where official statistics are both in arrear and unreliable can never be of any great value. It is a regular case of "making bricks without straw," and for those who really are anxious to do their duty a heart-breaking business.

No doubt the annual report has a value of its own, but it should certainly be written in the spirit our recent instructions, and should not attempt too much detail, a separate report being sent in whenever the consul feels confident that he has reliable information enough on any special subject to make a report.

One point of special importance is the subject of hastening as far as possible the publication of the information sent in. It would be quite beyond my competence to make any suggestions on the means of doing this, but I may mention that the United States publish a volume of consular reports monthly, and also issue volumes in the same form at irregular periods.

The German consular reports appear in a monthly publication of the foreign office, the reports being edited, and either the full reports or extracts only being published, according to circumstances, extracts from papers and other miscellaneous information appearing in the same publication.

The Austro-Hungarian consular reports appear in a weekly publication issued by the minister of commerce, and are also "edited," and other commercial information appears alongside of the consular reports.

The French also publish their reports weekly, I believe, so that our chief competitors in trade all manage to get into print faster than we do, recognizing in a practical way that the very essence of usefulness in commercial information is that it should be quickly conveyed to those who make use of it.

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No. 64.

*Consul Wrench to the Earl of Rosebery.*—(Received May 1.)

CONSTANTINOPLE, *April 26, 1886.*

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The main cause of the falling-off in British trade rests with the merchants themselves, who, instead of imitating the example of the Germans (whose success they so much deprecate), think it unnecessary, from motives of economy or from indolence, to send agents or commercial travelers to foreign countries to advance their interests, and appear to expect that our consuls and the officials in England will replace the services of such men. After investigation the merchant will find that it is not on the consul that the German merchants depend for their information, but on the commercial agents dispatched by them to all parts of the world. Odessa, at times, is overrun with German commercial travelers. Steady, intelligent men, speaking at least one language in addition to their own, who seem to devote both time and energy to the business of their employers, some of them, I am assured, making their headquarters at Odessa, Kieff, and other important cities. These persons possess a small pecuniary interest in the purchase or sale of goods, and, as a consequence, they do their utmost to increase the trade of

their masters. They, moreover, enjoy the confidence of their employers, who allow themselves to be guided by their opinions, whereas the English merchants are said to pay little or no attention to the suggestions of their agents. Added to this, the English commercial traveler is rarely to be met with here, and when he does put in an appearance finds it difficult to do business through his ignorance of foreign languages. This, I am told, is especially the case in the interior of Russia, where a knowledge of German or Russian is very necessary.

Again, the Germans invariably employ their own countrymen as resident agents. The English just as frequently give their agencies to foreigners or natives. This has always appeared to me to be a grave mistake, for although the foreigner or native is ready enough to fill his own pocket, he really cares little or nothing for the interests of his English employer, and I know instances where agents for English firms have gradually ousted English ships and English goods, and supplanted them by ships and goods of their own country.

The Belgian manufacturer, by means of his commercial agents, has also cut the ground from under the feet of the Englishman in this part of Russia, and it could not easily be asserted that the cause of this improvement in the import trade of Belgium has been brought about by other means than the employment of commercial travelers.

The English merchant, until quite lately, has had more than his share of the trade of the world, and has made money so easily and so plentifully that he has grown overconfident, and cannot now realize that the merchants of other countries have put their shoulders to the wheel and relieved him of some of his profits. More than this, the English as a rule wish to deal for cash, while the German and other foreigners are only too glad to accept orders on long credit.

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[Inclosure in No. 67.—Memorandum.]

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It can, however, scarcely be denied that there is now a visible decadence in individual enterprise, due, perhaps, in some degrees to the influence of joint-stock companies; and were such not the case, the present appeal for Government aid to commerce would probably not have been made.

Internal and foreign competition, by reducing mercantile profits to a minimum and, as it were, pulverizing trade, does not apparently admit of the expenditure incurred in a previous, more prosperous, period in searches after new markets or in local studies of old ones by direct agents and travelers.

The luxurious standard of living in Great Britain, and the consequent high remuneration of all descriptions of work performed within exceptionally fewer statutory or customary hours of labor (frequently, like wages, regulated by strikes), combined with a decidedly defective education in regard to the practical acquisition of foreign languages, undoubtedly places the modern British merchant and manufacturer at a disadvantage in relation to his foreign, and principally his German, competitor.

Consequently, while the frugal and well trained and practically instructed commercial traveler for a German house is ubiquitous abroad, studying markets and the standing of customers, taking orders for small but numerous amounts at risks minimized by minute local knowledge, it is only the larger English firms that are occasionally found represented on the continent of Europe by fairly competent men.

Thus, in Norway, where Germany does a large business in manufactured goods, the hotels at all the small ports, from the Nahe to the North Cape, are full of German commercial travelers, the apparition of a British colleague being an exception of the utmost rarity.

With the object, partly, of assisting such travelers, more than thirty British vice-consulates have been established along the Norwegian seaboard, and although attention has been called to that fact in consular reports, it has been a matter of disappointment to find that German commercial agents continue to have it all their own way in a country so little distant from our own shores.

It is futile to expect that the activity of such agents can ever be replaced by that of consular officers, however able, vigilant, and zealous they may be. The want of technical knowledge alone in regard to manufactures precludes them from obtaining the more minute practical information which merchants and manufacturers require in the manifold branches of industry and trade that now encounter so keen a competition.

As regards the present indirect co-operation of consular officers in the promotion of British trade and navigation, it is afforded chiefly in the form of annual reports of a retrospective character, constituting in their aggregate a kind of commercial barometer, of which the registrations, in order to be of value, must be clear and infallible.

It may be admitted that those reports are open to improvement in respect of their contents and internal arrangement. They generally convey much of the information to which Sir Jacob Behrens calls attention under paragraphs (a) to (g), excepting, perhaps, "Reports on all Popular Movements," which would seem to belong to the political series of dispatches.

The reports are only somewhat defective in system and uniformity, for while some may be found too discursive, others are too dry and brief. They should all be prepared, so far as it may be judged practicable, on a common plan for arranging and tabulating materials, and refer to recent and simultaneous periods.

Limited in scope to specified subjects under well-defined headings, the principal object of the reports should be to record the contemporary fluctuations of trade, keeping always in view the paramount necessity of watching the progress of foreign competition with British goods and shipping.

A further improvement would consist in issuing the consular reports in groups of countries, not merely in the order of their receipt at the foreign office. Thus, the various reports, timely rendered, from France, Belgium, Germany, Scandinavia, &c., would be contained separately or jointly in earlier volumes than those referring to countries more distant.

An index could be added to each such volume instead of to each report, as suggested by Mr. Jeans.

In order to stimulate the zeal and emulation of unpaid British vice-consuls and consular agents, who are generally local merchants, they should be supplied with a copy of the volume in which their reports severally appear, superintending consuls receiving, as heretofore, all the volumes published by the foreign office.

So long as the United Kingdom stands so regrettably aloof from the decimal system of weights and measures adopted with so much advantage in most other European countries, the conversion of foreign weights and measures into English equivalents should be the rule in consular reports; and that operation would be rendered less laborious and faulty than it is at present if tables of equivalents for each different system of weights, measures, and coins were prepared at the board of trade and issued to consular officers.

THOMAS MICHELL,  
*Her Majesty's Consul-General for Norway.*

HULL, April 30, 1886.

No. 68.

*Consul Joel to the Earl of Rosebery.*

CADIZ, April 29, 1886.

It should be understood that Her Majesty's consuls are not to give an opinion as to the commercial standing of a merchant or firm engaged in business in his district, as the giving of such information implies a certain amount of moral responsibility which consuls should not be called upon to assume, especially as such information could be more readily obtained by the party desiring it through his bankers.

In conclusion, I beg to say that British merchants do not evince that amount of enterprise and self-reliance, nor do they appear to take that

interest in the requirements of foreign markets, which is shown by their French, German, and Belgian competitors. Agents or travelers for French and German firms are continually visiting Cadiz, and they are enabled to give their employers valuable information, resulting from their knowledge and experience in their respective trades, while British merchants seek to extend their business through the medium of information derived from the consul, who, however desirous he may be to facilitate British commerce generally, cannot go into every particular case as though he were an expert in every trade comprised in the commerce of the world.

I have, &c.,

LEWIS JOEL.

No. 72.

*Consul-General Grattan to the Earl of Rosebery.—Received May 7.)*

[Extract.]

ANTWERP, May 6, 1886.

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I am fully conscious of the importance attached to the suggestions which have been made to Her Majesty's Government on this subject, and I am of opinion that many of these suggestions might without much difficulty be carried into effect.

1. As respects the desire manifested that information generally should be transmitted home earlier than is at present usually the case, I would remark that much depends in this matter upon the time of publication in each particular country of statistical and other official returns.

In Belgium, the annual trade report issued by the minister of finance is not published until about the month of November in the year following that to which the returns refer, while the reports of the municipal authorities, chambers of commerce, and other public bodies do not appear at a much earlier date.

The only particulars, consequently, relative to trade and industry available here at the close of each year, or the beginning of the next, consist of the summaries published in the leading mercantile journals, which are no doubt useful, and sometimes interesting, but are necessarily very incomplete.

Means might, perhaps, be found to obtain, through the local authorities, earlier information respecting trade matters upon certain points.

The annual returns of navigation are published, as a rule, in the month of January.

2. The suggestions respecting a more convenient mode of drawing up consular reports, so as to enhance their practical value, in view of the requirements of commerce, have already, I imagine, been met to a considerable extent by the recent foreign office instructions on this subject.

3. The question of government or other public concessions in respect to important undertakings, such as loans, railways, harbor improvements, &c., is also one of interest. The general system adopted in Belgium in such matters is that of giving notice by public advertisement of all important public works in contemplation, inviting tenders for the

same, and communicating to parties, on application, the terms of the proposed contract ("cahier des charges").

Without being able to state precisely the particular relations to all recent concessions, I may mention that, to my knowledge, several English firms have participated of late years in the execution of public works in this city, such as the following: Sir William Armstrong & Co., who contracted for the supply of hydraulic cranes and other work in connection with the maritime establishments; the Imperial Gas Company of London, for the lighting of the town of Antwerp; the Antwerp Water Works Company of London, for the supply of water to the town; Messrs. J. L. Bacon & Co., engineers, for the heating of various public establishments; Messrs. Easton & Anderson, for providing lifts for the new hospital, &c.

In this connection I take leave to mention to your lordship that I have been promised that in future a copy of all "cahiers des charges" relating to works about to be undertaken by the municipality of Antwerp will be communicated to me, and I may also add that a publication entitled "Chronique des Travaux Publics," specially intended for giving publicity to projects relating to public undertakings and enterprises, is published in Brussels, and might easily be furnished if required.

4. As respects general obstacles to trade, which might be modified, I may mention that, notwithstanding the liberal tendencies of Belgium in relation to commercial questions generally, the heavy customs duties on a large class of our products, as well as, in some cases, the high forwarding and other charges on the transport of goods, operate to a certain extent prejudicially to the development of British trade.

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6. I should approve of the establishment of an official periodical journal devoted to the interests of trade and industry, which would admit of information being disseminated more promptly than by means of the ordinary blue books.

7. Taken as a whole, I do not doubt that the suggestions referred to in Mr. Bryce's dispatch are entitled to the fullest consideration, and that many of them might be adopted with advantage to the commercial interests. If acted upon, a wider range of inquiry would be opened out to Her Majesty's consular officers, but this extension of their duties would involve an additional expenditure of time, and also, no doubt, a pecuniary outlay, in view especially of the suggestion that a closer personal intercourse or touch should be maintained between consular representatives abroad and the mercantile communities with which they are brought into contact.

## APPENDIX.

### (A.)—*Instructions to Her Majesty's diplomatic representatives.*

1. Extract from the sign-manual instructions to Her Majesty's ministers:

"You will make the commercial interests of Great Britain an object of your constant attention."

2. Extract from the circular of the 24th February, 1867, which originated reports at regular intervals from missions abroad:

"Her Majesty's secretaries of embassy and legation, with a view to the same result [i. e., knowledge of commercial questions], might occasionally, and with the sanction of their chiefs, visit the great manufacturing towns, and also, in maritime countries, the outports, and witness the course of business there; and, if necessary, suggest from personal experience the adoption of measures by which the trade of British subjects might obtain facilities or be relieved from burdens and obstructions."

In a circular of the 6th April, 1872, Her Majesty's representatives were called upon to report on the general question of British trade with the country to which they were accredited, and to suggest means for its further development.

In a circular of the 8th of May, 1878, they were instructed to forward "*Précis of Parliamentary debates or proceedings, or the proceedings of public bodies, on matters affecting British commercial interests.*"

As regards regular reports, the secretary of embassy or legation at Paris, the commercial attaché, or a junior member of the mission in his absence, is required to prepare and send to the foreign office at least two reports every year, one commercial, on the "industry, trade, and general statistics" of the country where he resides; the other financial, on its budget and finances generally. These reports are directed to be forwarded half yearly. In addition to them, reports on subjects of commercial or general interest are required as occasion may arise.

The following circular, 8th March, 1881, contains the general directions now in force for Her Majesty's diplomatic and consular agents abroad with respect to British subjects who are seeking to promote industrial undertakings or to obtain concessions from foreign governments:

"It has been the general rule of this department that the secretary of state should decline to give letters of introduction or recommendation to Her Majesty's diplomatic or consular agents abroad in favor of gentlemen proceeding to foreign countries for the purpose of promoting any specific commercial or industrial undertaking, or of obtaining concessions from a foreign government. The reasons for this rule are obvious. It is generally impossible for the secretary of state to form a correct judgment as to the soundness or practicability of such undertaking; he cannot be well acquainted with the nature or merits of rival enterprises, and in the possible case of several British subjects of equal respectability being competitors for the same concession, he might be placed in an embarrassing position if one or more had not received the facilities which had been afforded to the other.

"The strict and universal application of this rule is, however, difficult.

"It is not always possible to decline altogether to British subjects of good standing and respectability the introduction which is necessary to show that they are persons of consideration, and to enable them to obtain access to the authorities before whom their proposals are to be laid. It may also occasionally happen that the bearer of a formal letter of introduction granted in the belief that it is desired for social purposes only may endeavor to turn it to account for purposes of business.

"I think it desirable, therefore, in order to guard against the risk of misunderstanding, to state that letters of introduction must not under any circumstances be construed as committing the home Government to the promoting of any particular enterprise, but only as intended to insure for the bearer that he should meet with such a reception as a traveler of respectability is entitled to."



*(B.)—Instructions to Her Majesty's consuls.*

The general consular instructions contain the following paragraph :

"It is the duty of consular officers to protect and to promote the lawful trade of Great Britain by every fair and proper means, and to uphold the rights and privileges of British merchants. Whenever changes are made which affect trade, either as regards general regulations or by increasing or diminishing duties or charges, such changes are immediately to be communicated by consular officers to the secretary of state, and to be made known to resident British merchants."

Consuls are required, in addition to sending dispatches at the time on any matters which concern British trade, to forward every year a commercial report on the trade of their district during the preceding year. At ports, navigation is also included.

In 1872 special reports on the position of British trade were called for and laid before Parliament. Since that date various circulars have been addressed to consuls with the view to improve these reports. They were instructed on the 25th of January, 1879, that special endeavor should be made to procure information on any of the following points:

- (a) Any local impediments to British trade.
- (b) Any opportunities which may present themselves for its extension.
- (c) Its progress and relative importance in the consular district as compared with the trade of any other countries, and they were further instructed by the same circular to draw up and forward their annual report, so that it should reach the foreign office not later than the 30th March in each year, without waiting for the issue of statistics or other official publications, which might be embodied in a supplementary report at a later date.

In a circular dated the 18th October, 1882, consuls received a general approval of their reports, which, it was added, "might, however, in many cases become still more useful by enumerating the various articles of British and colonial produce or manufacture for which a favorable market appears to present itself in your consular district, as well as those for which there is either no demand, or which can be more readily supplied from other countries. Opportunities for return freights, the export trade to the United Kingdom, industrial institutions, new inventions or appliances which may affect trade and commerce, harbor improvements and dues, landing and embarking facilities, average rates of freight, and public announcements for tenders for the execution of public works, are also matters which might with advantage be noticed as opportunities arise."

In December last the subject of the shape in which consuls' commercial reports could be improved, in order to make them more useful, was considered in consultation with the board of trade. A fresh instruction was issued, from which the following are extracts:

"Statistics of exports and imports are frequently given in much greater detail than is really needed. They may most conveniently be dealt with in future by the two forms, Annexes (B) and (C) to this dispatch. In the first of these forms it will be necessary only to enumerate the principal articles of export and import at your place of residence or in your consular district, leaving out, in the enumeration in detail of articles of export or import, those commodities which are of minor importance. The exports and imports in the year for which you are reporting should be compared with those of the previous year as regards quantities and values. Values and quantities should be stated in sterling, and British weights and measures only, the rate of conversion from the money and weights and measures of the country being clearly explained in a note. The second of these tables, Annex (C), is intended to indicate the principal countries from which articles of import are received, and to which articles of export are sent, and the extent of the trade.

"Other subjects which may be included in your trade report, namely, agriculture, cattle, population, industries, public health, and public works, should be treated chiefly from the point of view of commercial interests. British trade, and the means which may be suggested for its development, should form the principal object of these reports. The market prices of commodities, rates of freight, insurance, &c., should, as a rule, only be mentioned in general terms, unless you have any particular reason for a fuller statement. Fuller details respecting any of these matters may form the subject of dispatches in your commercial series whenever it is advisable to report on them.

"In writing out the annual report, the subject of each separate paragraph should be noted in the margin, in order that any special subject may be more readily found and utilized for the index at this office.

"Vice-consuls will in future furnish their reports to their superintending consul, who will read such reports carefully, and use his discretion as to annexing them in full, or merely embodying extracts from them in his own report. The superintending consul should, however, be careful to see that the instructions contained in this dispatch are strictly complied with in vice-consuls' reports."

(C.)—*Memorandum respecting the commercial museums at Antwerp and Brussels, and trade publications of Belgian Government, by Mr. C. M. Kennedy, C. B., and Mr. A. R. Bateman.*

Before proceeding to describe the commercial museums at Antwerp and Brussels, which we have recently visited by direction of the foreign office and the board of trade, it may be well to observe that there are two—or rather, three—distinct types of museums already in existence:

1. A museum of specimens of raw materials and manufactures imported from and exported to foreign countries, limiting the specimens of these exports to goods produced in countries other than that where the museum is established, so that information as to the description and price of goods used abroad is confined to what is produced by foreign competitors, and does not disclose the prices, &c., of home competitors.

The second class of museums—or, perhaps, rather export agencies—of which those at Lille, Stuttgart, and Munich are examples, are permanent exhibitions of articles produced in the country where they are established. Foreign buyers are invited to inspect these collections, and home manufacturers are strictly excluded. This limitation to bona fide foreigners must, however, often be eluded by stratagem, and there is also the difficulty that buyers, in times of depression especially, will not come to the sellers, but will wait to have goods brought to them.

- A third class of museums, or export agencies, intended to meet this state of things, has lately been spoken of in Germany, viz, a ship fitted up as a warehouse, which is to take German goods to the principal trading centers of the world and force a market there.

To the same class belong the stationary collections of patterns which the Germans are reported to be establishing in North and South America.

The commercial museum at Antwerp belongs, however, to none of these types, being merely a collection of specimen articles of import and export arranged for the instruction of students at the "Institut Supérieur de Commerce," of Antwerp. This institution gives lectures, examines and grants diplomas to young men engaged in commerce. There are at present about 125 students in attendance.

The course takes two years, and the more general system of education adopted on the Continent compared with our own is well exemplified by it. In England, where trade is kept in well-defined grooves, it would seem strange to see a young man in the wool trade attending lectures on mineral ores or tobacco, so as to have a wide, if rather superficial, knowledge of all branches of trade.

The Antwerp Exhibition, which has just closed, contained two special trade collections, namely, the Congo section, which was organized and supplied by the Brussels Commercial Museum, and the French colonial section, which showed specimens of the articles produced and used in all the French colonies. The town of Antwerp, too, had, as an especial exhibit, a very imposing triumphal arch, composed of specimens of Antwerp foreign trade; but this was, of course, rather for the general purpose of the exhibition than for private use.

Coming now to the Commercial Museum at Brussels, we would wish, first, to record our thanks to the department of the affaires étrangères, from whom we received every attention and facility in inspecting the building and its contents.

The museum is a large and fairly commodious structure, situate in the Rue des Augustins, not far from the Bourse, and within easy reach of both railway stations. Not having been built for its present purpose, it is somewhat deficient in light on the ground floor; but it was secured at a low price in 1881 by the Belgian Government, who paid about 10,000*l.* for its purchase and alterations. They also pay a rent of 420*l.* a year to the town of Brussels. Furniture and fittings cost 3,000*l.*, and the annual amount voted by the Belgian chambers for its maintenance is about 1,000*l.*

The founders of the museum, which was started in 1881, had three chief objects in view:

1. To show the Belgian importer and manufacturer where he could best supply himself with the materials for manufacture direct from the place of production;

2. That the manufacturer should have the best information as to the goods in use and demand in foreign countries, so as to enter the field of competition if he saw an opening; and

3. (Which is really a branch of the second) that the manufacturer should also see the method of packing and getting up goods for export which is in favor in various countries.

The classification of the specimens is by forty-four general groups, which are divided into about 400 classes, again subdivided by the numbers of specimens.

For instance, Group 25, "Products of Spinning and Weaving," is divided into fifteen classes, which include some thousands of patterns, classed under the place where they are used. The explanation given in each instance further states the consul by

whom furnished, the country where they are made, their cost and description, length and breadth by which sold, &c.

Each pattern has a number corresponding with that in the catalogue, and this publication contains particulars about all the chief articles, as to the quantity used in the country from which the specimens come, and the proportion made there and elsewhere. The unprinted records of the department, which are shown readily to commercial applicants, give very complete details on these and cognate points of interest to them. The specimens are periodically furnished by Belgian consuls under a general order, which directs them to obtain patterns of all new articles of important consumption; and, on application from manufacturers and persons interested, special demands are constantly made on the consuls for specimens to fill gaps in the collection. Duplicate patterns, when they can be spared, are also often given away to those interested.

Besides the collection of specimens, which occupies three floors of the museum, a reading-room is also available, where the chief commercial journals of all countries are to be found, as well as technical dictionaries and business directories.

A special office supplies all information as to freight charges by sea or land—no unimportant element of cost; another department collects and publishes notices of tenders required by all the Belgian public departments, and those notified by Belgian representations abroad. The commercial journals in the library also afford much information on this point.

No general notices of home and foreign bankruptcies appear to be published in connection with the museum, but Belgian consuls give special information to applicants as to the credit of persons in their districts—of course without a guarantee. The names of the chief houses interested in the trade of which specimens are exhibited are also among the particulars furnished to applicants.

The prices of goods in the catalogue are stated to include customs duties at the various places; the collection of foreign tariffs open to the public is, however, not kept here, but at the *ministère des affaires étrangères*. As, however, the *Moniteur Belge* has printed all the chief tariffs in full, and adds from time to time any changes, a perusal of that publication will usually suffice.

We have not yet mentioned the weekly bulletin of the museum. This publication acts as a supplement to the catalogue, which is only printed once a year, and is constantly changing by the addition of new specimens and the removal of others in which the trade has become obsolete. The bulletin also contains abstracts from home and foreign consular reports and trade journals, &c., and the notices of tenders to which we have referred. Its price is 50 centimes each number, or 12 francs a year in Belgium and 18 francs abroad.

As to the extent to which the public make use of the museum it is somewhat difficult to judge. Visitors who simply walk through the rooms and inspect the specimens, without making any inquiries at the bureau, are not recorded in any way; but we were informed that about twenty persons per day consulted the archives of the museum for special information. We are also told by Mr. Consul-General Grattan that at Antwerp both merchants and manufacturers have expressed themselves as favorable to the principle of the museum, and desirous that something similar should be established at Antwerp as a supplement to the present educational museum to which we have referred above. Antwerp is naturally anxious to continue the great progress she has made of late years, both as an *entrepôt* and as a manufacturing center; and we find, indeed, from the table appended, No. 1, that her imports have increased in the last ten years from 1,800,000 to 2,500,000 tons, and her re-exports in transit have nearly doubled. Whether this will substantially affect the supremacy of London in the colonial trade time will show, but to establish more intimate relations between the foreign producer of the raw material and the home consumer, by means of the import department of the museum, is regarded by the Antwerp people as an important consideration.

With regard to the general question of establishing commercial museums in this country, three chief points occur to us as necessary to be first settled, viz:

1. Are the commercial and manufacturing classes in need of these institutions?
2. Should a single museum be established in London, or several provincial museums in the chief manufacturing towns?
3. Should any help be given by the State, except in the way of supplying articles through our diplomatic and consular machinery?

As regards 1 and 2, we would call attention to an article that appeared in the "Manchester Guardian" on the 31st July last, in which the need for such institutions is strongly urged. Several letters have since appeared in the same paper showing considerable interest in the subject, which has also been mentioned in the "Economist" and other papers. The second Report of the Royal Commissioners on Technical Instruction, vol. i, p. 353, gives some interesting details of the Museum of Textile Fabrics at Mulhouse, which is stated to have exercised a very beneficial influence on the industry of the locality. It is true that this museum combines the art element

with the purely commercial influence which we have been considering at the Brussels Museum, and this is a very desirable combination, provided that museums for the different branches of industry could be established in the large manufacturing towns where they could be in close connection with the schools of design.

In France, where the chambers of commerce were consulted two years ago, the majority were in favor of provincial museums subsidized by the State, and this opinion is being acted on. There is, however, a department in the Ministère du Commerce at Paris where specimens sent home by consuls may be inspected, and notices of anything special being received are published in the "Journal Officiel."

There is also the Museum of Colonial Products, lately forming part of the Antwerp Exhibition; and this reminds us that in case it is thought desirable to employ our consuls to render the same assistance as is given in Belgium, provision may also have to be made for obtaining similar specimens from our colonies, where, of course, there are no British consuls. The same necessity exists for bringing the domestic producer and the distant consumer in the colonies into closer relation, as in the case of foreign countries. Our foreign competitors are on the lookout to secure these markets. It is probable that some of the exhibits in next year's Indian and Colonial Exhibition in London may be available for the formation of such a museum.

In conclusion we would suggest that, having regard to the importance of the matter at the present time, it would be advisable to appoint a departmental committee, consisting of representatives of the foreign, colonial, and Indian offices, the treasury, and the board of trade, to obtain the views of the chambers of commerce and of other associations and persons interested in foreign trade, as to the propriety of establishing a museum or museums of the kind we have described; and such committee should also advise Her Majesty's Government as to the necessary details of establishment and expense.

C. M. KENNEDY.  
A. E. BATEMAN.

NOVEMBER 3, 1885.

(D.)—*Extract from a report on the system of French official commercial publications and on the establishment of commercial museums in France, by Mr. J. A. Crowe, C. B., commercial attaché to Her Majesty's embassy.*

#### *Official publications.*

The collection of statistics and information relating to trade is systematically carried out in several departments of the French administration, but chiefly in the ministries of commerce and finance. The ministry of finance is responsible for the publication of a monthly work called "Documents Statistiques sur le Commerce de la France," and a monthly "Bulletin de Statistique Comparée."

The first is devoted entirely to the commerce of France, of which it registers the values at monthly intervals; distinguishing imports from exports for the same periods in each of three consecutive years, and noting the chief countries with which trade is done. In addition to this these monthly volumes include the values of all the principal articles imported and exported for ten years, the quantities of goods in bond, the imports of goods admitted free subject to re-exportation, the production, import, and export of sugar, and tables of navigation. All this, it is needless to say, is independent of the larger annual folios published under the titles of "Statistics of French Commerce" and "Statistics of French Navigation."

The bulletin of "Statistics and Comparative Legislation," also published monthly, comprises all the Laws and Decrees connected with finance and taxation, précis of custom-house revenue and bank returns, and miscellaneous statistical notices from abroad.

The work of the statistical department of the ministry of finance is so divided that it is difficult to give its cost in salaries. But the charge for printing alone is 2,519,500 francs (£100,780), of which 495,000 francs (£11,800) go to preparing the "Bulletin de Statistique," the budgets, and other publications above mentioned. The ministry of commerce prepares for publication such great works, as the annual folios of the "Statistique de la France." It also issues the "Annales du Commerce Extérieur," and the "Bulletin Consulaire," which are monthlies; and the weeklies, called "Le Moniteur Officiel du Commerce" and the "Bulletin Officiel de la Propriété Industrielle et Commerciale."

The "Bulletin Consulaire" requires very little editorial work, as it merely contains annual or half-yearly consular reports, which require little more than correction in proof. The advantage which this collection has over our consular reports is that it appears monthly throughout the whole year, at a fixed price of 1 franc 25 centimes (1 shilling) per number, or 12 francs a year, and is independent of the sessions of Parliament.

The "Moniteur Officiel du Commerce" is a newspaper with one chef de bureau at the ministry of commerce as editor, and three ministerial clerks as subeditors. It appears weekly, with twenty-four pages of close print, at the price of 50 centimes, or 44d. per number (£1 per annum). It is edited in the department of foreign commerce, and contains official documents, appointments, parliamentary reports, and papers relative to trade and commerce, and précis of custom-house circulars. A separate heading is given to foreign commercial legislation, and customs regulations and quarantine orders. Then come the proceedings of French chambers of commerce abroad, abstracts of monthly or quarterly consular reports, giving details as to the state of foreign markets, abstracts of foreign consular reports, miscellaneous news extracted from commercial publications, notes of business in French colonies, exhibitions, railway goods rates, notices to navigators, post-office notices, and sales and advertisements of public contracts. Whether as a financial speculation this paper pays is uncertain. It has frequently three pages of advertisements, but is furnished gratis to chambers of commerce and commercial museums.

Attached to the "Moniteur" though put together in the department of home commerce, is the "Bulletin Officiel de la Propriété Industrielle et Commerciale," a weekly sheet of sixteen pages, for which the charge is 50 centimes per number, or 30 francs a year.

But it is arranged that any subscribers to the "Moniteur" and "Bulletin" can have them both for 41 francs 25 centimes a year. The "Bulletin" gives summaries of patent laws at home and abroad, and reports of patent and trades-mark cases, decrees, and legislation. But the columns are mostly filled with specifications of patents, and additions to the same, and notices of new trade-marks, the business of each week being given regularly and alphabetically in each number of the periodical. The "Annales du Commerce Extérieur," which appear monthly, at 15 francs a year, or 25 centimes a sheet, are made up of contributions from three different departments. Under the head of commercial legislation we have commercial, navigation, and monetary treaties and conventions, and decrees and circulars of the customs and inland tax office.

Foreign tariffs form a set of sheets apart from the rest, and a third series of sheets is devoted to "commercial items."

If, on the one hand, the first of these parts gives rise to little editorial manipulation, the second creates a great amount of labor in the commercial department, because the tariffs are translated into French, with foreign rates and measures turned into French rates and measures. The third particularly requires careful labor and supervision. But the "Annales" have not what may be called a special newspaper staff.

The cost of printing in the ministry of commerce alone is down in the Budget for 280,000 francs a year (£11,200). Of this sum the shares for printing the commercial publications are as follows:

	Francs.
Annuaire du Ministère .....	1,900
Annales du Commerce Extérieur .....	17,000
Bulletin Consulaire .....	9,000
Miscellaneous .....	5,000
Annual statistics .....	15,000
Annuaire Statistique de la France .....	12,000
Various .....	3,000

In the autumn of 1883 an office was opened at the Ministère du Commerce, called "4<sup>e</sup> Bureau des Renseignements Commerciaux." This office, in the department of foreign commerce, enters into correspondence with persons desirous of information; it is also open at fixed hours daily to persons desirous of obtaining the latest information forwarded by French agents abroad to the ministry of foreign affairs. This information is posted up under the name of "Avis Consulaires," and is not only posted up to be read, but to be copied by reporters for the press. Since the opening of the "Bureau des Renseignements Commerciaux" took place a change has been made in its arrangements; it now deals not only with communications relative to commercial subjects, but with communications in respect of the formation of commercial museums; and this, there can be no doubt, will become an increasing business if the interest in these institutions increases.

#### *Commercial museums.*

The propriety and desirability of establishing commercial museums in France was taken into consideration by the French Government as far back as the autumn of 1883. In March 1885, in reply to questions embodied in one of Lord Granville's dispatches referring to these matters, I wrote "that a commission appointed to consider proposals for creating French chambers of commerce abroad had, in the course of its deliberations, discussed the subject of commercial museums. The report of this com-

mission is now before me. I am indebted for it to the kindness of the minister of commerce. It begins by setting forth that all questions of principle, as regards commercial museums, have been decided in accordance with the opinions expressed—almost unanimously—by the French chambers of commerce in their answers to a ministerial circular issued on the 11th of September, 1883. The decisions of this commission are embodied in the following resolutions:

1. It is of interest to found commercial museums in great industrial and commercial centers. So far as exhibits are concerned, each museum is to be special, and suited to the region in which it is established.

2. The title of "commercial museum" will be granted to any establishment of the kind founded or patronized by a chamber of commerce.

3. The expenses of museums are to be supported by local institutions, such as chambers of commerce, industrial societies, syndical chambers, and the like, or by the towns which own them or contribute to their foundation. For this purpose chambers of commerce are to be authorized, on their own demand, and in accordance with circumstances, either to draw for their expenses on their own special budgets, or to charge them to the account of their ordinary outlays for libraries, studies, or miscellaneous objects.

The State cannot remain altogether aloof from creations of this kind, which are calculated to produce excellent effects as regards the education of French mercantile men ("commerçants"), manufacturers, and workmen. It is therefore advisable ("il y a donc lieu") to introduce into the budget of the ministry of commerce a credit for commercial museums. Yet, under all circumstances, the commission thinks the financial intervention of the State need not be obligatory, nor is it to be more than an annual and renewable payment in aid, subject to the previous participation of chambers of commerce, municipalities, and local institutions of the regions in which the museums are to be founded.

4. The managing body of museums, as well as the administrations or persons from which samples are procured, are to be free from all responsibility towards the public in respect of all information furnished through the medium of those establishments.

I have made very strenuous efforts to ascertain what in France has been the result of the agitation for commercial museums. I have visited most of the museums themselves, and I have convinced myself that, unless the Government and local bodies concerned in these matters combine to expend a fair amount of capital as well as good wishes upon them, they are not likely to afford even that measure of success which some of the original promoters thought it would be feasible to attain.

The museums which I first visited were in the north of France. A note which I had received informed me that twelve museums had been instituted at—(1) Amiens, (2) Angoulême, (3) Aubusson, (4) Clermont-Ferrand, (5) Elbeuf, (6) Grenoble, (7) Lille, (8) Rheims, (9) Rouen, (10) St. Quentin, (11) Tarare, (12) Troyes.

Ministerial decisions have endowed these places with the official character of commercial museums. But up to the end of May many of these establishments were not yet in working order. The places most forward in this respect were said to be Aubusson, Clermont, Elbeuf, Lille, Rouen, St. Quentin, Tarare, and Troyes. Besides these, however, there were older establishments of the same type already in existence in Paris, St. Nazaire, Arras, Bordeaux, Boulogne-sur-Mer, and Lyons. The full account of my visit to these places will be found in the report, which in accordance with my instructions I have drawn up and forwarded to the foreign office for publication.\*

J. A. CROWE.

PARIS, July 15, 1886.

(E.)—*Memorandum by Mr. C. M. Kennedy, C. B., with regard to the publication of diplomatic and consular trade reports in other countries.*

It may be observed, in the first place, that the United States, French, and Belgian reports, which have lately attracted much attention in this country, are simply founded on the model of our consular reports. They are of comparatively recent date; for instance, the first United States trade report for Portugal is for the year 1883, and is based on information supplied by Mr. Consul Brackenbury to his United States colleague.

The consuls of these countries have far less work to do than British consuls. A well-drawn circular for special reports on the cotton trade was latterly addressed by the Secretary of State to United States consuls, and the answers have been instructive. The comparative novelty of the thing and special conditions have, in many instances, led to good reports by foreign consuls; but they are not superior (except occasionally in particular details) to the reports of British consuls, and the persons who edit these publications in foreign countries are surprised and amused at the enthusiastic remarks lately made here with respect to them.

\* Miscellaneous series No. 5 (1886).

The French system, which I lately examined, is as follows: Each consul has to make an annual report, and, in addition, a short statement on current trade matters once a fortnight, or at least once a month. On asking whether French consuls really did supply these reports, whether they existed in fact or only in theory, and what happened if the consul did not supply them, the answer was that if there really was nothing to report there was no reason to maintain the consulate, and the post would be abolished, or else the man was useless, and he would be replaced by some one who could supply reports. This argument is good to some extent; but it must be remembered that the making reports is not the only duty, and often is not the chief occupation of British consuls. The French consular annual reports are published in the *Bulletin Consulaire Français*, which is issued in monthly parts. The fortnightly or monthly reports are published in the *Moniteur Officiel du Commerce*, a weekly publication, which contains official announcements on trade matters from different ministerial departments, and a variety of other information bearing on these subjects. This publication has the largest sale of any French official publication. It has about 500 annual subscribers, who pay 25 francs; the price of each copy is 50 centimes. The sale of the *Bulletin Consulaire* is small, like that of our own consular reports.

All consular reports are sent in MS. (often with preliminary excisions) from the French foreign office to the ministry of commerce, where they are printed, and the proof sent, with remarks, to the foreign office for final approval before publication. There is an editing bureau, with a chief and a staff of three or four assistants; they also manage the printing of other papers of the ministry of commerce. Such papers come to them from each department in a state of preparatory revision; they are printed as received, and the editing bureau returns the proof with remarks when they seem necessary, but the responsibility both of publishing and of the form adopted rests with the department which they concern. There is another useful publication issued by the ministry of commerce, the *Avis Commerciaux*, chiefly extracts from the *Moniteur Officiel du Commerce*. About 1,000 copies are struck off and issued gratuitously to chambers of commerce, newspapers, and the prefects of departments.

C. M. KENNEDY.

FOREIGN OFFICE, *June 4, 1886.*

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UNITED STATES CONSULAR REPORTS.

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES

ON THE

COMMERCE, MANUFACTURES, ETC.,

OF THEIR

CONSULAR DISTRICTS.

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No. 69.—October, 1886.

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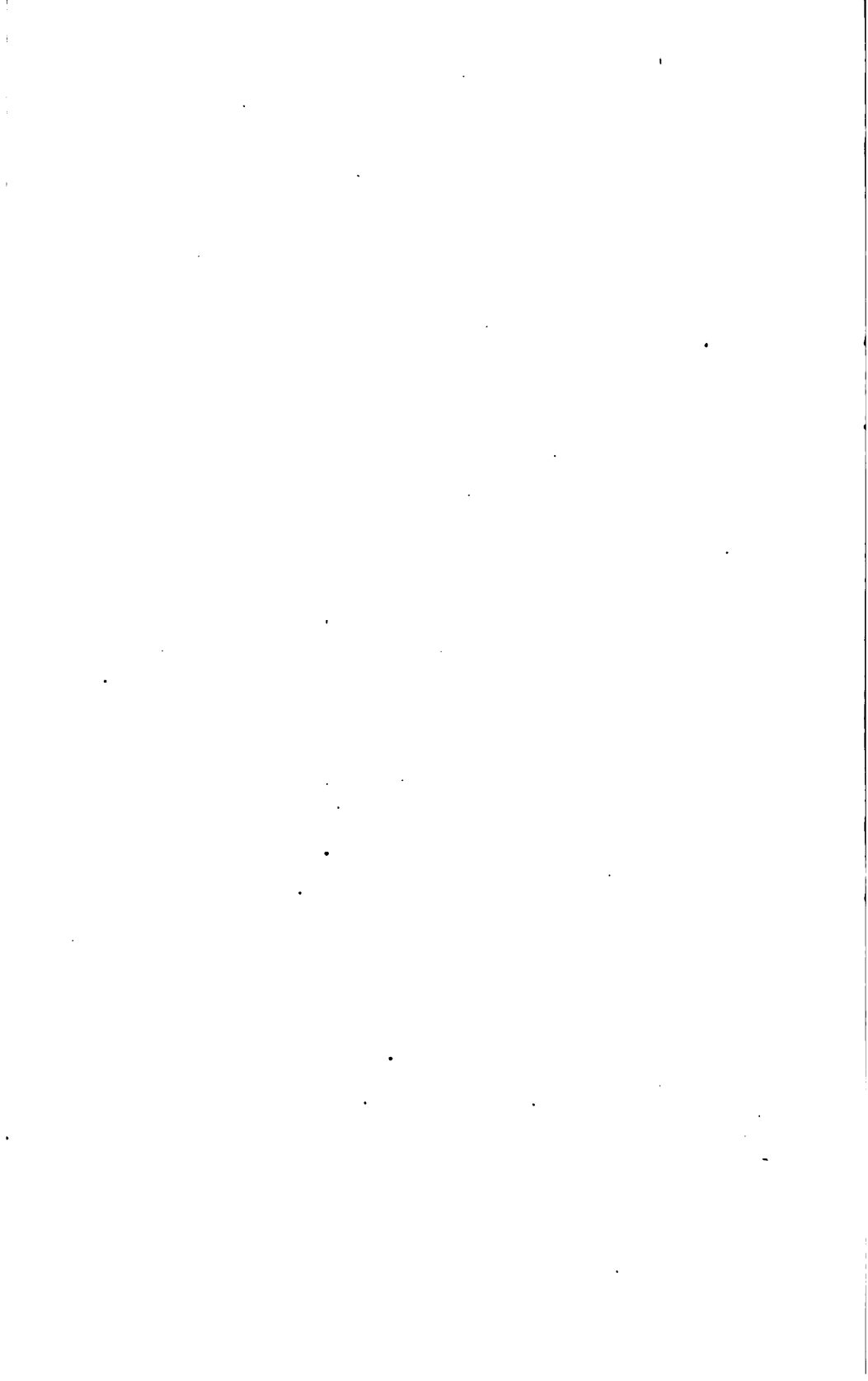
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WASHINGTON:  
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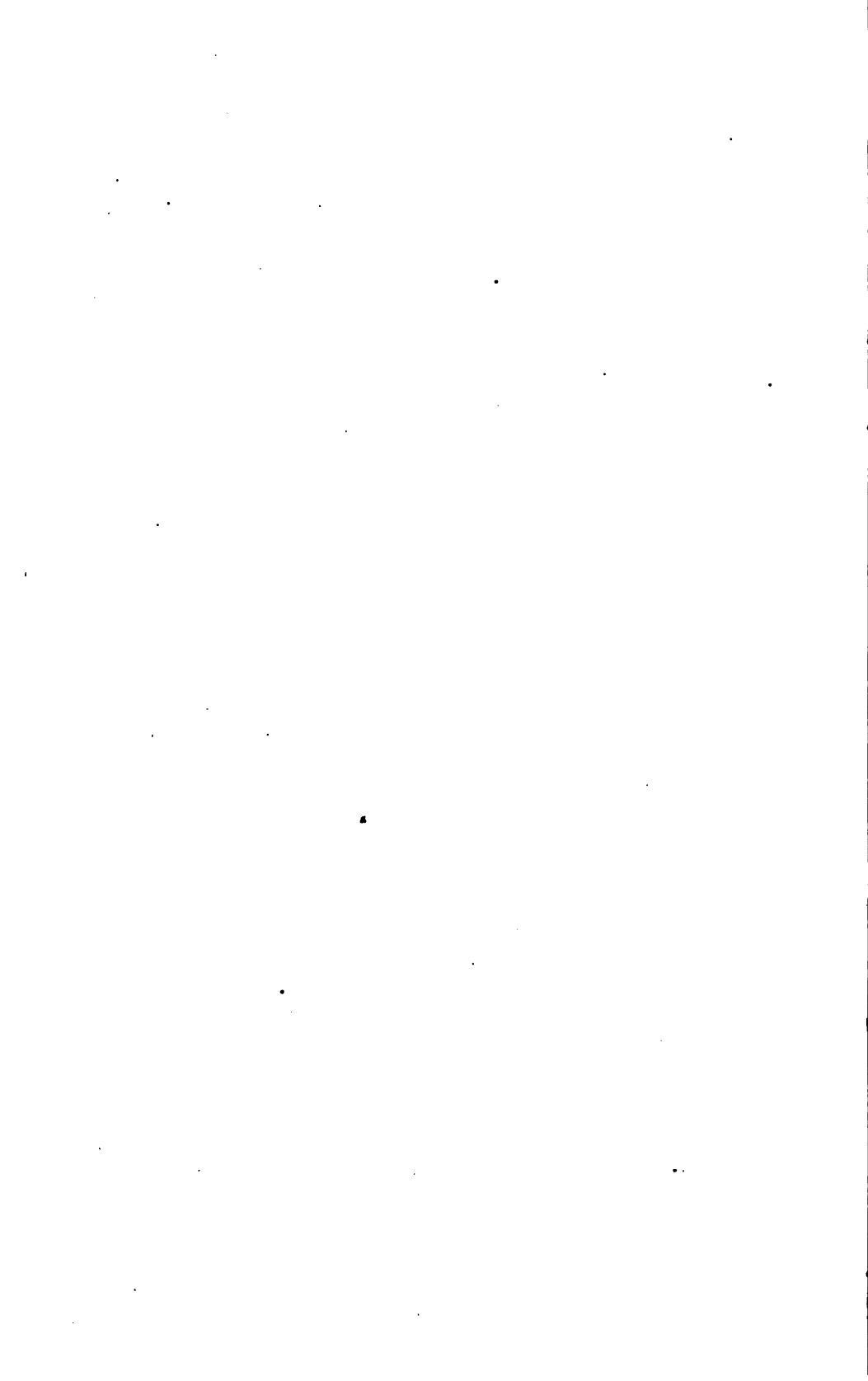
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**DYES AND COLORING MATERIAL OF THE ARGENTINE REPUBLIC.**

*REPORT OF CONSUL BAKER OF BUENOS AYRES.*

When Brazil, with its immense forests bordering upon tide-water, was first opened to foreign commerce, the demand for its dyes and dye-stuffs was so great that no inconsiderable part of the revenues of the King of Portugal was derived from the royalties he exacted from the trade.

In the case of the countries of the River Plate, their mineral regions and forests were so remote from the seaboard, and the navigation of the Parauá River was then so uncertain and so limited, that but little was known of their resources in dyes and dye-stuffs; and subsequently the facilities with which all these articles of *prime* importance in the textile arts have been procured from the Brazils and the countries of Central America have been so great that but little scientific attention has thus far been paid to the classification of such articles in these lines as this country affords. It is only in countries where textile manufactures are most flourishing that the art of dyeing is studied and applied in its full significance, and in the absence of cotton and woolen mills in the Argentine Republic the materials for producing colors have received but little application. There has been no demand for them either at home or abroad.

**TEXTILE ART AND HAND-MADE FABRICS.**

Although it is more than four hundred years since the River Plate was opened to development, the textile arts are yet in their embryotic state. Indeed, under the old Spanish viceroys, when all commercial intercourse with other nations was jealously interdicted, these arts were far better understood and practiced in the Argentine Republic than they ever have been since. Then, from the necessity of the case, the

natives— and of course I include the Indians—had to depend in great part upon their own expedients and the resources of the country to procure materials necessary for covering and clothing. In those days in all the upper provinces the cotton plant was more or less cultivated for its fiber in the production of fabrics. Of late years the little that is raised is used only to make wicks for tallow candles. In former years no flax was raised in the country; and now, with the development of agriculture, it is planted merely for the seed, which finds a ready sale abroad. The material most used in the early days of the Spanish conquest for the production of fabrics was the fiber of a plant called *chaguar*, of the order of Bromeliacæ, which is found growing wild in the upper provinces, in the Gran Chaco, and in Paraguay. From this the natives and Indians not only made threads for nets, hammocks, &c., but also nearly all the articles of their clothing. The quality of this fiber has, of late years, been fully tested. Indeed, experts from the United States have been here with a view of preparing and exporting it to the United States, and only failed on account of the present difficulty and expense of getting it ready for the sea voyage, owing to the fact that the inland transportation is so costly.

When in time intercommunication becomes more easy, it is predicted that the fiber of the *chaguar* will compete with the hemp of Manila, which, indeed, is said to be less uniform and durable. Besides this fiber, the wool of sheep, vacuñas, guanacos, alpacas, and llamas was used by the inhabitants of the interior in the manufacture of yarns, threads, and cloths, and the skill with which, without the usual appliances of the art, they worked shawls, ponchos, &c., is even to the present day a marvel to all who examine their fabrics. The natural color of the vacuña wool, which formerly was the principal material used to make ponchos, varies from a white to a dark brown. By separating the filaments of different tints and making threads of them with the spindle they were enabled, by means of a common hand-loom, to weave a garment which, aside from its striking arrangement of colors, was far superior in closeness of texture to the best woollens of commerce. These native fabrics are still made in Catamarca and some of the other upper provinces, but not in quantities to meet the demand for them. The principal merit of these legitimate ponchos thus made consists in their perfect impermeability to rain-water at the same time that they are both light and fine. It must be confessed, however, that they command exceedingly high prices. It is seldom that you can buy one for less than \$50, while those of superior finish and coloring command from \$100 to \$200, thus quite rivaling the camel's hair shawl. The high price which these ponchos at present are sold for is explained by the fact that hunting the animals is now somewhat difficult, and inasmuch as they do not produce many young, unless they are better protected by law they will soon quite disappear from their fastnesses in the cordilleras of the Andes. It may be remarked, however, that although only wealthy people can purchase these legitimate ponchos, the country is now flooded with European imitations, mostly made from the wool of sheep, which is dyed to resemble as nearly as possible the color of those made from the wool of vacuñas or guanacos. The natives also in the interior provinces are now making imitations from the wool of sheep, but the wool is dyed in all imaginable and possible colors, from flaming red to indigo blue; and their knowledge of dyes and coloring matters is so limited that the fabrics present a dirty, dingy look. These dyes are generally fixed colors, made from vegetable substances, for which reason but few mordants are used or even known.

## MATERIALS USED FOR COLORING.

Under these conditions and with such limited opportunities for the use of coloring matters in the textile arts, it is not strange that the Argentine Republic is almost an unexplored country in the matter of dyes and dye-stuffs. The full extent of its resources and possibilities in these respects can only yet be conjectured; but lately public attention has been somewhat directed to the subject, and Prof. Max Siewert, the well-known German scientist and chemist, now of the University of Cordoba, has devoted considerable attention to this department of chemistry. M. de Moussy, in his work in French, has also made extensive reference to the subject. Their researches and investigations, and especially some of the experiments of the former, seem to be of so much interest, not only to those who are engaged in textile manufactures, but also to those who are especially occupied with the chemistry of dyes and dye-stuffs, that I translate and transcribe them for the information of our own milling establishments, taking the mineral, the animal, and the vegetable dye-stuffs of the Argentine Republic in their order.

## INORGANIC SUBSTANCES.

While it is not as yet known here how to prepare the red lacs, viz, the combinations between the true animal and vegetable coloring matters, and between the acids and mineral bases, the people of the country are content with the simple impregnation of the cloths in the different salts, so as the better to fix the colors in the threads. The mordants which the country affords are the following:

(1) *Alum and sulphate of alumina*.—Both these salts are found in the natural state in the provinces of Jujuy, Salta, Rioja, Catamarca, and Cordoba.

(2) *Salts of lead*.—In a crude way the people of the interior prepare the acetate of lead by dissolving the oxide of this metal in vinegar; a *litharge* results from separating the silver from the argentiferous lead.

(3) *Sulphate of copper*.—This salt is generally found somewhat mixed with green vitriol in the districts of the copper mines of the provinces of Catamarca, Rioja, San Juan, Salta, Jujuy, and Cordoba.

(4) *Sulphate of iron*.—Copperas has a more general application than the sulphate of copper, because it is more frequently found, and is used in the foundries to facilitate the fusion of the argentiferous lead ores and for the making of ink.

(5) *Combinations of potash*.—In nearly all the provinces the vine is cultivated, but as yet it is not generally known how to prepare the cream of tartar—bitartrate of potash—made by the fermentation of must. With the development, however, of viticulture in the country a new source of wealth must be created in the exportation of this article, and of tartaric acid, which is extracted from it.

(6) *Carbonate of soda*.—This salt is principally extracted from the ashes of a saline plant called *jume*. This is a bush peculiar to the Argentine saline heaths. Of all known plants the *jume* gives the greatest quantity of ashes, burning with the greatest facility and with intense heat even when green. It yields nearly 42 per cent. of carbonate of soda, and covers immense tracts of country.

## ANIMAL SUBSTANCES.

*Cochineal*.—This insect (*Coccus cacti*) grows in the greatest abundance upon the *opuntia* of this country, more particularly in the provinces of



Cordoba, Mendoza, Santiago del Estero, and Rioja. If the people of the interior possessed more enterprise, the cochineal could be made to produce a splendid return and a most profitable business.\* In all parts of the country the *tunas*, or prickly pears, are used for hedges or to protect vegetable gardens, but less in view of the production of cochineal than to harvest the fruit, which is eaten fresh or under the form of a thick sirup or preserve, made by cooking it in copper vessels.

In the province of Tucuman and other places where the cochineal is gathered, it is crushed in wooden mortars, and afterwards the paste is formed into little cakes, which, when dried, are sold under the name of *grana* (scarlet).

*Bullocks' blood*.—The facilities for procuring this article, used to some extent in dye works, are unusually favorable, owing to the large number of *saladeros*, or special establishments for slaughtering the immense herds of horned cattle which constitute a large proportion of the wealth of the country. In 1883 the shipments of dried blood were 789,144 kilograms, valued at \$23,674; in 1884 they were 666,771 kilograms, valued at \$20,003, all of which went to England and Germany.

#### VEGETABLE SUBSTANCES.

It is difficult to give a clear explanation of the vegetable dye-stuffs which are in use in the different provinces, for the reason that the natives call the same plants or trees by different names, and in some instances use the same name to designate very different plants. Were the trees or plants scientifically determined, it would make no difference in regard to the confusion which exists as to their common names; but in the absence of their botanical designations, the former in some cases have to be used.

#### ENTIRE PLANTS

*Indigo*—This is the *Indigo añilifera*, a papilionaceous plant. There are two species: the one, cultivated, which being treated in the same manner as the Chinese plant produces an identical coloring matter, making a blue deposit by the action of concentrated sulphuric acid; the other, which grows wild, called *añilcillo*, or *añilillo*, from which a blue matter is also prepared, but somewhat different from the first, because with sulphuric acid it only forms a white insoluble paste. This white mass in water again gives a blue dye without being decomposed. For the purpose of using it as a dye, it is necessary to ferment it in an alkaline liquid. The *añil* is used to dye both blue and green. Inasmuch as the first operation is well known, it is not necessary to explain it. In respect to the second, I would state that the threads of wool are first stained yellow with the juice of the *valda*, of the *Chilca dulce*, or of saffron, and then they are dipped two or three times into a solu-

\* M. de Moussy, in his "Description de la Confédération Argentine," page 518, vol. 1, says of *Cactus opuntia*: "It grows in the most barren lands. The industry of gathering the cochineal is given up to the women, who go into the fields and brush down the insects upon sheets, and then placing them in boiling water or drying them on iron plates in an oven, afterwards making them into cakes mixed with a little bullocks' blood. The best—those that are not mashed up—are separated, as they command a better price; but the trade is exceedingly limited. Never has an *opuntia* been cleared or planted for the purpose of multiplying the cochineal. Though the plant may be said to fill the country, the gathering of the precious insects is without method or system, the plants frequently being destroyed without any thought for the following year."

tion of *añil*. If the tint is then too deep, they are again dipped in the yellow liquid.\*

*Saffron* (*Chuquiraya chrysantha*).—The first watery decoction of this plant contains a yellow color; the second a red one; but it is evident, owing to the crude appliances, that the separation of the two colors by this method is very imperfect.

*Wild chamomile* (Spanish, *manzanilla silvestre*).—A number of very different plants are comprehended under this name, though none of them have any similarity to the *camomila*. The dry plant is boiled in water charged with alum, and by dipping the wool into this boiling liquid it is dyed a very clear yellow.

*Sweet chilca*.—This plant, which is found on the shores of the rivers in nearly all the provinces, is a resinous and very aromatic little bush belonging to the family of the Compositæ. It produces a fragrant and a somewhat sweet-tasting fruit, whence its name. The dry bush, together with its fruit, is generally used to dye yellow, though the juice extracted from the green plant produces the same color. For the first a coloring bath of the plant is first prepared by boiling the dry bush for a long time in water charged with alum. The boiling liquid is then strained and returned to the vessel, duly cleaned; and the material to be colored is then boiled in this bath until the tint is satisfactory to the dyer. The material is then dipped in a solution of the bicarbonate of ammonia. For the second, the material is first impregnated with alum and then dipped in the boiling solution of the juice.

*Palala*.—This name is given to a plant very little known, which produces a fiery orange color.

*Valda*, a plant or vegetable the extract of which, without being previously impregnated by any mordant, dyes wool to a very firm yellow. As before stated, the wool dyed yellow by the *valda* is changed to green when passed through a solution of *añil*. On the other hand, should these yellow threads be dipped into a hot bath of carbonate of soda, or lye from the *jume*, the yellow tint becomes orange. This *valda* in the northern provinces is called *queltotarpo*, and in the Quinchua language it is called *kejatulpuno*.

*Tojo*, sometimes called *Santa Maria*, is a bush which is probably identical with the *Tecoma stans* (Juss.). It grows about 10 feet high, and produces in the spring a very delicate yellow flower. A decoction of the plant produces a color corresponding to that of the flower, which is unalterable by alkalies.

*Tola*.—This is an arboret, which chiefly grows in the province of Salta, and is used for dyeing yellow. For this purpose the threads of wool are dipped into an aqueous extract, which has been prepared by boiling with alum. To fix the color the dyed threads are then boiled in a bath of urine or carbonate of ammonia.

*Figure*, a plant, also sometimes called *fije*, which belongs to the family of the Cinchonaceæ. It contains a yellow tint, but not much is known as yet of its application.

#### LEAVES, FLOWERS, AND FRUITS.

*Clavelina (zinnia)*.—The flowers of this plant are used to produce a scarlet color.

\* The use of indigo as a dye seems to be attended with some peculiar circumstances. In its real state as indigo it is insoluble in water, and only becomes soluble when it is so chemically changed as to produce a yellow dye, and to combine with lime or potash. But any woven fabric, which has been dyed yellow, begins to turn green on exposure to the atmosphere, and the green gradually changes to blue, for which indigo is so much valued.

*Malva*.—This is the mallows (*Althea rosea*), the dark violet flower of which, as in the United States, serves with alum to produce tints from gray to violet blue, and with salts of tin the dark violet tints.

*Moller*.—This is the *molle á teñir* (*Duvana fasciculata*, *D. præcox*, and *D. dependens*), the young branches of which, with their leaves and fruit, are specially used for tanning purposes because they contain 19.2 per cent. of tannin, but with the use of copperas they also produce a gray tint, much employed in dyeing wool.

*Espinillo*.—The *espinillo bravo* is confounded in some of the provinces with the *tusca aromatica*, and in others with the *charqui*. Its botanical name, however, is *Acacia caverna*, while that of the second is *Acacia aroma*, and that of the third is *Prosopis adstringens*. The fruits of all are rich in tannin, and therefore they can be used with copperas to dye from gray to black.

*Guayacán* (*Cæsalpina melanocarpa*).—The fruit of this tree is called *algorrobillo de guayacán*. The natives, however, call all fruits similar to bean or pea pods by the name of *algorrobilla*, a signification which is also applied to the trees themselves, thus causing much confusion. The pod of the *guayacán* is short and thick, containing four or five seeds. Whilst the seeds themselves are lacking in tannin, the pods contain almost 22 per cent. of this material in a perfectly pure state, which with copperas makes a fine gray to black dye. Inasmuch as the *guayacán* is a very abundant tree in the northern provinces, and produces a great quantity of pods, it offers a material which must hereafter attract attention as an important article of export.

#### ROOTS.

*Alvarillo*—sometimes also called *albaricoque*, *albaricoquillo*, and *damasco*. These trees, though all belonging to the genus *Prunus*, are not completely identical, and, according to their state of cultivation, produce more or less different kinds of fruit. The coloring matter which the bark of their roots, and even a part of their trunks, contain, with a combination of alum produces a yellow tint, which, with a combination of carbonate of soda, is transformed into dark crimson.

*Raiz punzó*.—In English this is called red-root. With alum the watery extract produces a red color, which, if afterwards treated with carbonate of soda or with ammonia, is transformed into a deep scarlet red.

*Raiz del cerro*, also called *soconto*, the root of which contains a highly esteemed color, probably the *alizarina*, which has not been heretofore found except in the *Rubia tinctorium*. The plant belongs to the genus *Galium*, and is probably the *G. hirsutum* or *Richardiarnum* (Endl.). The roots of the plants which grow upon the high lands of the interior are the most esteemed. The wool is dyed, without any mordant, from crimson to dark wine color, and the tints are fast, resisting the action of lye or the rays of the sun.

*Raiz de pata*.—The *pata* is a low tree, and in the bark of the roots, in the bark of the trunk, and even in the wood itself, a coloring matter exists which has not been critically studied, but which with alum produces a tint called "coffee color."

*Sacha-uva*.—This is a *Berberis*, the roots of which, like the European plant, contain a yellow matter—the *berberina*—which, without mordants, dyes wool a very fine yellow.

#### BARKS.

*Cebil* (the *Acacia cebil* (Gries) grows in the northern provinces of Tucuman, Satla, Jujuy, and in the Gran Chaco in great abundance)

The bark is principally employed in the tanneries, because it contains about 15.5 per cent. of tannin. In combination with copperas it can also be used in dyeing to produce tints from gray to black.

*Sauce*.—This is the willow, *Salix Humboldtiana*. The extract of the bark of the willow, as also that of the *algorrobo blanco*, produces the tints most esteemed by the people of the country. As I have already said, the natives have for some time been endeavoring to imitate successfully the natural tint of the vacuña wool, because the ponchos woven with this wool have the highest price and are of the best quality. As it is extremely difficult to separate the fibers of the vacuña wool in such wise that the different tints may be woven exactly equal, a substance which will dye any other white hair or wool the color of the vacuña—coffee color—in its shades, and be at the same time firm and lustrous, must be of great value. Only the extracts of the barks of the *sauce* and the *algorrobo* serve efficaciously to this end. To produce the deepest tints of the brown color the cuticle of the willow bark is employed, but the derma is preferred for the lighter tints. It is necessary, however, to saturate the threads with alum, as a mordant, before attempting to dye with the *sauce*.

*Nogal*.—This is the *nogal silvestre*, or wild walnut—*Juglans nigra*—which answers the same purpose as the *sauce*, but its colors are less firm and brilliant.

#### WOODS.

*Quebracho colorado (Loxopterigeum Lorentzii)*.—By boiling the sawdust or shavings of the red *quebracho*, a dark-brown liquid is produced, which, being evaporated to dryness and cooled, produces an almost black resinous residuum, which is brittle and of a certain luster, but with which as yet no scientific experiments have been made. For this reason neither its exact chemical composition nor its physical properties are perfectly known, but from its appearance it is very similar to the matter which has long been known to commerce as *dragon's blood*. The extract of *quebracho* is used alone to dye wool, as also with such mordants as alum and copperas, or sulphate of copper. In the first mode the wool is dyed from bright to dark brown; in the second, from gray to black; in the third, to a violet red.\*

*Algorrobo blanco (Prosopis algorrobo, Gries)*.—A brownish-black sap sometimes runs down in the bark of the very old trees, which impregnates it with a resinous and gummy substance that completely dissolves in hot water, thus forming a dark-brown tint very similar to the extract of *quebracho colorado*. By detroncating the trees of the very largest size, a black and extremely bitter sap exudes from the tree, which gradually solidifies in the air. This has not as yet been scientifically analyzed. The aqueous extracts made from boiling the wood and then evaporating to dryness do not solidify on being cooled so perfectly as those of the *quebracho colorado*, but form delicate, viscous, and somewhat tough superficial laminæ. The solution of the coloring matter of the *algorrobo*, without recourse to any mordant, produces very fast colors, not only in wool and silk, but also in cotton and linen goods; as likewise in the fiber of the *chaguan*. The color varies from the clearest to the blackest brown, according to the application.

*Orovillo*.—It appears that both the bark and the wood of this plant contain the same coloring material, which the natives call *tinta punzó*—deep scarlet red. The preparation and application, however, of this

\*The *quebracho colorado* in the general texture and fiber of the wood has very much the appearance of the logwood of the West Indies. It is hard, compact, dense, and of a very deep-red color.

coloring matter is a secret in the hands of certain families in the interior, who refuse to give to the public any information on the subject.

*Lapacho* (*Tecoma asper*, Gries).—This tree belongs to the family of the Bignoniaceæ, and is one of the most elegant representatives of the subtropical vegetation of the Northern Argentine provinces; but the botany of the tree is not yet quite exact. Probably several species of *Lapacho* exist. The one most common, in the spring of the year, before the new leaves begin to sprout, is so densely covered with exquisite flowers that no ray of the sun can intervene. The tree, however, is not merely interesting on account of its flowers. The wood of its trunk is remarkably firm and strong, and for that reason is in most extensive use. The axles of carts, as also the entire wheels, ox-yokes, the teeth of cog-wheels, carpenters' tools, &c., are made from the wood. In a chemical point of view the wood of the *Lapacho* has also very remarkable qualities. In the first place, of all the Argentine plants and woods it produces the least amount of ashes, which are composed of the salts of phosphoric acid. In the second place, the chemical composition of its organic material is very complicated. From experiments thus far made, it appears that its bark and wood afford about 7 per cent. of tannin, and 7.5 per cent. of coloring matter which crystallizes well, and about 12.5 per cent. of another coloring matter of less value, since it does not crystallize; also about 5 per cent. of a substance similar to caoutchouc. As the latter, as well as the coloring matter, is insoluble in water because of their resinous composition, it is not strange that the wood long resists decay. Indeed, it is stated that when the wood has remained some time in water it becomes indurated to such an extent that it is impossible to cut it with steel axes.

Dr. Siewert, after a careful scientific study of the yellow coloring matter which exists in the wood, pronounces it a very important dye-stuff. His method of preparing it for use is as follows:

A quantity of the sawdust or the shavings is boiled in iron vessels, to which are added 10 grains of crystallized carbonate of soda for each kilogram of the wood. After boiling for an hour it is heated two or three times anew with fresh quantities of water in other vessels. To the liquid extract which results from the portion of the wood already treated the same quantity of wood and a proportionate quantity of carbonate of soda are added, without interrupting the boiling of the liquid. The first portion of the wood already treated is then thrown into the second vessel, which contains the same quantity of water, and to which for each kilogram of wood 5 grains of carbonate of soda have been added. It is proper that the second extract should also be made by heat. After an hour of this treatment the wood of the second vessel should be passed to the third vessel, which only should contain pure cold water, and that of the first to the second, and so on. If in the first vessel 5 kilograms of wood to 10 kilograms of water have been treated, the concentrated extract is thrown into another vessel to cool and deposit its impurities. Then the liquid of the second vessel is passed to the first one, where it serves to treat fresh portions of the wood; that of the third to the second, and that of the fourth to the third. The wood which was in the fourth vessel is now found to be entirely deprived of its coloring matter. Finally the water which served to boil the shavings in the first two vessels is added to the cold extract, which is precipitated by crude hydrochloric acid until the liquid colors litmus paper red. A yellowish-green substance is precipitated in the crude coloring matter. After filtering it and washing it in rain-water it is purified according to the following method: It is dissolved with an equal weight of crystallized carbonate of soda in 10 parts of boiling water. The filtered liquid is again precipitated when cold by hydrochloric acid, and the precipitate is washed until the water in which it is so heated does not present any acid reaction. Finally the dried mass is dissolved in boiling alcohol, and after filtering the alcoholic liquid to separate the last impurities, it is crystallized. By following this method 10 kilograms of raw material and  $7\frac{1}{2}$  kilograms of pure crystallized matter will be obtained from 100 kilograms of wood, which is soluble in 7.75 parts of boiling alcohol of 85°, or in 94.5 parts cold alcohol. Inasmuch as this coloring matter, hitherto unknown, easily eliminates the carbonic acid of the carbonate of soda and dissolves into a liquid the color of blood, it is certain that it represents an organic acid. And for this reason, in accordance with its origin, it has been named lapachic acid.

This acid, when crystallized by ether, forms very delicate little leaves of a somewhat greenish-yellow color; when crystallized by alcohol the leaves and prismatic crystals are very small, and when crystallized by sublimation it forms into the finest needles. As yet it has not been possible to determine with certainty its crystalline form, but it appears to belong to the quadratic system. Like the acid, all salts of this wood dissolve in boiling alcohol.

The lapachic acid is extremely sensitive to any trace of free basic materials and to the carbonates dissolved in water. For this reason it appears that it would be well to prepare reactive papers; and, in effect, filtering paper impregnated by the lapachate of soda—a violet-red paper—is stained yellow by the liquid acid, and the yellow paper becomes dark by the basic liquids.\*

The lapachic acid, its salts, and the products of its decomposition merit much attention from dyers, because, according to the mordants and the degree of concentration of the flux, they produce very diverse colors in wool and silk; that is to say, whether the goods impregnated by the mordants be at once passed through the flux of the coloring-matter or the contrary, or whether they are dyed in cold or heat, the following colors are produced:

(1) *Rose crimson*.—Use chloride of tin, alum, or acetate of lead for mordants; then dye in a flux of the lapachate of soda, and purify by soap.

(2) *Yellow*.—Saturate the cloth with the bichloride of tin, then pass it through the hot flux of lapachate of soda, dry it, and purify it in a hot bath of lapachonic acid.

(3) *Clear brown*.—According to the strength of the mordant, of sulphate, or, better, of acetate of copper and of the flux of lapachate of soda, each one of the tints of brown will be produced. The goods are afterwards cleansed by soap.

(4) *Dark brown*.—The goods impregnated with chloride of iron are dyed in heat in the flux of lapachate of soda, and afterwards cleansed by soap.

#### NO COMMERCE IN DYE-STUFFS.

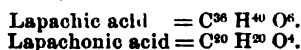
I have thus given an extended résumé of what Dr. Siewert and M. de Moussy say in reference to the coloring materials of the Argentine Republic. As has already been remarked, however, nothing has ever been

\* In regard to this lapachic acid, Dr. Siewert goes on to say:

"The lapachates of lead and barytes when crystallized in alcohol do not contain any water; but the lapachate of soda crystallized in water retains a considerable quantity of it; thus it happens that with the simple heat of the bath-of-Maria it melts in its own water, but crystallizes again when cold, and afterwards appears on the surface like velvet of a dark-violet color.

"When treated by hot concentrated nitric acid, the lapachic acid is partially dissolved and gives off brilliant acid; but in somewhat diluted acid it is completely dissolved. A carmen-red matter—nitro-lapachic acid—crystallizes from the solution, which as yet is incompletely studied.

"The lapachic acid, when treated with hot sulphuric acid, is completely dissolved without giving off any gas, but forms a blood-red liquid. On throwing this liquid into water an orange-colored matter is precipitated, which when washed in water and afterwards dissolved in boiling alcohol crystallizes in fine brilliant needles of a grayish color. Whatever remains dissolved in the aqueous liquid—such as the glucose matter—reduces the cupreous-alkaline solution of Fehling. The crystalline product which results from the action of the concentrated sulphuric acid was previously called *lapachonic acid*. The same reaction is effected by boiling the lapachic acid for a long time with diluted sulphuric or hydrochloric acids. The composition of the two acids is given in the following formula:



done in the matter of making the dyes and dye-stuffs of the country articles of foreign commerce. In spite of the fact that all parts of the Republic are so rich in these materials, there has scarcely been a movement towards their utilization beyond the meager demands of a few spindles and hand looms in the interior provinces, the people importing quite all the threads, yarns, and woven goods used in the country. That there is a field here for the building up of a large trade in coloring materials scarcely admits of a question. In regard to most of the articles above enumerated, they are found or grow spontaneously in the country, and are immediately accessible along the shores of the Upper Paraná and the Paraguay. The *lepacho*, the *quebracho*, the *algarrobo*, and nearly all the other trees mentioned grow in great quantities and wonderful luxuriance all along those rivers; while as to the rest, there are railways leading through the provinces where they are found.

In regard to such plants, shrubs, &c., as require attention for their proper cultivation and development, a few words may be added.

#### THE CULTIVATION OF SAFFRON.

The saffron (*Carthamus tinctorius*), although such a free and ready grower, is at present scarcely cultivated in this country, except as an ornamental shrub. Only to a very small extent is it used for coloring purposes. Whole plantations of it, however, could be produced with the least particle of care, and there are few plants that could be put to more valuable uses. While its twigs are excellent food for all herbivorous animals, its seeds furnish a quarter of their weight of oil,\* good to eat and burn, so that only on this account the shrub is worthy of cultivation; but when we consider it as a coloring material there are few herbs more useful than this modest plant. In Europe, as also in Asiatic Turkey and Egypt, the flowers of the saffron, gathered for coloring purposes, give rise to a very large trade; and with a very little enterprise the same might be the case in the Argentine Republic. The yield is about 250 pounds to the acre—a highly valuable crop—which makes it worthy the attention of agriculturists, the consumption of the product being very large in all the cotton and woolen factories of Europe and the United States, at prices which would make its exportation certain at a large margin for profits.

#### INDIGO PLANTATIONS.

The cultivation of the indigo plant (*Indigofera tinctoria*) would also seem to be deserving of attention in this country. The *Indigo añilifera*, commonly known here as *añil*, is indigenous in the northern portions of the Argentine Republic. At one time it was cultivated to a considerable extent, but of late years it has been quite abandoned, owing to want of enterprise and that attention to the mechanical and chemical processes, which are necessary to prepare it for market. The East Indies, Egypt, West Indies, and Central America furnish the greater part of the indigo of commerce; but as the consumption is very great and the article affords a great value in a small bulk, it appears to me that a great business could be made of its preparation for market in the provinces of Corrientes, Tucuman, and the valley of San Francisco, in Jujuy, where the climate and soil are favorable for the plant. As early as 1780, a native of Guatemala (where indigo is cultivated on a large scale) established a plantation and factory in the town of Cobos,

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\*This useful oil is known in India as the "koosum oil."

and we are told that "the indigo of Cobos commanded as high a price in Cadiz as that from Central America." Another establishment of the same kind was started in 1824 on the Rio Negro, in the valley of San Francisco, by a man named Soria, with most satisfactory results, but in making a voyage down the Rio Bermijo he was made a prisoner by Francia, the tyrant of Paraguay, and held in captivity for many years, thus breaking up his establishment; but "he spoke most favorably of the cultivation of indigo and the profits it would give if properly cared for, and that indigo would prosper in all places where the soil is deep, irrigation easy, and the climate warm, and he regretted that he was not able to continue what he had so well begun, thus enriching the Argentine soil with a cultivation which would provide the provinces of the north with an article of export of remarkable value compared with its small bulk."

In regard to the manner of growing the plant I am not fully advised, but it seems that it is ripe in about two months after being sown. When it begins to flower it is cut with pruning-knives, and again at the end of every six weeks. When the leaves are gathered they are thrown into a large vessel filled with water, care being taken not to scatter a kind of down which is found on the leaves, and which constitutes a considerable portion of their value. When the leaves have fermented, the water is drawn off into a second vessel, and the liquid is found to be impregnated with an earthy residue, which alone forms the blue substance known as indigo. A variety of processes follow, and it is then as a paste packed away in chests, where it dries and hardens, ready for market.

#### THE COCHINEAL INDUSTRY.

What I have said in regard to the cultivation of indigo can with still more reason be said of cochineal (*Coccus cacti*), which feeds upon the *Cactus opunti* or *nopal*. This plant grows in the most barren lands. It is found in especial abundance in certain parts of San Luis, Rioja, Cordoba, Santiago del Estero, and Tucuman. In the wide wastes of barrens on the line of the Cordoba and Tucuman Railway I have encountered leagues upon leagues of this species of cactus, filled with the precious insects, only awaiting enterprise sufficient to gather and cure them. It is true that the wild cochineal, badly cared for and badly gathered, has not the value of that of Mexico or Guatemala, where its production is the object of intelligent and methodical treatment, but that it is none the less of good quality is evident from the beautiful colors which the women of the upper provinces obtain from it for their textures. The harvest of the insects generally takes place in November and December, when the weather is hottest. The cochineal is found on all the nopals of the country, but more particularly on a small sort which grows about three feet in height and is armed with numerous prickles (*Opuntia coccinellifera Platensis*). The insect is enveloped in little whitish webs, similar to cobwebs. Under this shelter it breeds and multiplies from the end of spring till autumn—that is to say, from the middle of September till the middle of January—when it is removed from the cactus which bears it. The provinces of the far interior, where it seldom rains, are more favorable to the cochineal, for the reason that heavy rains wash them off the plant.

In those countries where serious attention is given to the culture of the cochineal, such as Mexico, Guatemala, Venezuela, and since more recent years, in the Canaries and Algiers, the nopals are planted in line at a regular distance of 5 or 6 feet from each other to allow better cir-



cultation of the air, the ground being first properly prepared and kept cleared of all parasitical plants. During the rainy season the nopals are sheltered under temporary awnings to prevent the insects from being washed away. When the season for gathering is over, the leaves covered with cochineal, which are intended for reproduction, are brought into the houses until the rainy weather is over, when they are replaced upon the nopals, which the young animals quickly cover. Thus cared for, the nopals become larger and better able to support the insects than the wild shrubs, and the multiplication of the cochineal becomes easier, more rapid, and much greater than where they are abandoned to the inclemency of the weather, as is the case in the Argentine Republic.

If the indolence and indifference to progress of the lower classes of the Argentine people were not known it would be difficult to explain how such an industry as the production of cochineal, at once so simple and so easy, is permitted to be so neglected, since in the interior provinces the aridity of the soil and the dryness of the climate indicate them as admirably suited for the business, and I do not think that it could possibly fail to pay large profits on a very moderate capital. What would be easier than to establish nopal plantations in the basin of the Cuyo, where it seldom rains, and where the *Opuntia* grows naturally? All through the level interior, and especially in the provinces of San Luis, Rioja, Catamarca, Santiago del Estero, and certain portions of Cordoba and Tucuman, the plant is found in the greatest abundance, and the insect is reproduced spontaneously. It is an industry which can be prosecuted by any person who has enterprise and a few hundred dollars capital. That which is obtained now without care and without cultivation will give some idea of what such an industry would yield if properly conducted.

It is probable, however, unless foreign enterprise comes in and takes advantage of the openings which the Argentine Republic offers in the several industries for the production of dyeing materials which I have mentioned, that they will remain undeveloped for as many centuries in the future as they have in the past.

E. L. BAKER,  
*Consul.*

UNITED STATES CONSULATE,  
*Buenos Ayres, May 12, 1886.*

## AGRICULTURE, MINES, SMELTING FURNACES, AND WOOLEN FABRICS OF BELGIUM.

### REPORT OF CONSUL SLADE.

The task of preparing an exhaustive and in its details a perfectly reliable report upon the topics comprised in your circular of July 15, 1885, embracing four general heads, Agriculture, Mines, Smelting Furnaces, and Textile Fabrics, with thirty-six divisions and thirty subdivisions, is attended in some instances with great and in others with insurmountable difficulties. The information upon which it is based must, in a variety of particulars, be derived from individuals none of whom can be presumed to feel any particular interest in communicating it, many of whom regard with the greatest suspicion and distrust the attempt to obtain it, and some of whom curtly and peremptorily refuse to give it. The following example will illustrate the jealousy and difficulty not unfrequently encountered in this respect:

Not long since, samples of manufactured goods were furnished to this consulate, under the impression, on the part of the manufacturer, that they were only intended for the private inspection of the consul, but upon discovering that they were to be sent to the Government their return was promptly demanded.

These difficulties are especially to be met with in the investigation of industries which come, or seem to come, in competition with those pursued in the United States. Hence the procuring of reliable data upon which to base a report is literally "the pursuit of knowledge under difficulties," difficulties which to be properly appreciated must be experienced.

Your circular asks for a "description" of machines used in agriculture, mines, smelting furnaces, and textile fabrics, a description of which, to be of service, must necessarily be technically detailed and accurate. Such a description by your consul would involve a proficiency in technical knowledge of machines and their different parts which he regrets to say he does not, and which he thinks no consul can hardly be presumed to possess. To obtain such a description from the manufacturers themselves is of the utmost difficulty, either from an absolute unwillingness to give it or from the serious tax upon their time that such descriptions would involve.

Many machines used in Belgium are manufactured in England or in other European countries, and by no possible means (except, perhaps, by the expenditure of a very considerable amount of money) can a reliable description of them be had here. I am not quite sure whether in the "description" requested are included, or not, drawings of the various parts of machines; but if so, as can readily be perceived, the difficulties would be materially increased. Except, therefore, in exceptional cases, and where obtained by special favor, the following report will be found deficient upon this branch of the investigation.

Your circular also asks for a report upon the "subsistence of laborers" employed in "agriculture, smelting furnaces, mines, and in manufactures of textile fabrics." This general head is subdivided into quantities and cost of the following articles of daily consumption: Meat or fish, tea and coffee, dairy products and eggs, bread, vegetables and fruit, sugar or sirup, spices, salt, &c., liquors, and clothing; also description and rent of dwelling-houses. I have been able, as will be perceived, to give in individual cases—but even that to a limited extent—the cost of subsistence of laborers in the mines, but to establish any *general* rule as to the subsistence of laborers in any one branch of industry I regard as practically impossible. The quantity and value of food consumed in two families of the same number of persons will be found to vary materially, resulting from economy in the one and waste in the other. No less difficulty exists in determining the "quantity and cost of clothing" for one year. A laborer who has a thrifty and industrious wife who repairs to the last possible point the clothing of her husband and children will pay much less for it per annum than the laborer with a wife idle, inefficient, and slatternly.

In the item of house rent the same difficulties exist in reaching a reliable conclusion. In this consular district there are to be found all conceivable grades of quarters for workmen, all varying in price, according to locality and quality. It should also be added, that as the wages of labor even in the same industry materially differ, and as the laborer generally lives up to his income, so, all other things being equal, will the expenses of living vary. In 1855, Mr. Duceptiaux, a Government official, published tabular statements going into the details of the cost of living of workmen in various industries, but they were found to be so unreliable, that although valuable statistics touching all branches of industry are published annually by the Government, no effort of the kind has been since attempted.

I have thought it both proper and necessary to submit these preliminary observations as serving to explain what without explanation would seem to be a neglect on my part to perform the duty incumbent upon me in reference to the branches of investigation to which I have referred.

#### DESCRIPTION OF LAND.

Belgium is composed of nine provinces, Antwerp, Brabant, East Flanders, West Flanders, Hainaut, Liege, Limbourg, Luxembourg, and Namur, with an aggregate population of about 6,000,000.

The following is its population by decades since 1833:

Year.	Population.	Year.	Population.
1833.....	3,821,017	1863.....	4,893,021
1843.....	4,213,863	1873.....	5,253,794
1853.....	4,548,607	1883.....	5,720,807

The total area of Belgium is 2,945,715 hectares, or 7,278,842 acres, of which 2,704,956 hectares, or 6,683,946 acres, are under cultivation. The

land is divided in the following manner, viz, 4,901,401 acres of ordinary farm land; 1,209,362 acres of forest land; 594,898 acres are utilized for roads, canals, rivers, lakes, and buildings, and 573,181 acres is uncultivable land. The ordinary farming land is divided amongst the following agricultural products:

Products.	Acres.	Products.	Acres.
Cereals of all kinds.....	2,309,552	Potatoes.....	492,611
Leguminous plants.....	81,773	Grass.....	961,474
Hemp, flax, &c.....	158,515	Vegetable gardens.....	93,158
Sugar-beets.....	80,621	Vineyards, orchards, &c.....	170,306
Root plants for cattle.....	89,334		
Other plants for cattle.....	459,057	Total.....	4,901,401

The soil of Belgium is by no means uniform, presenting seven strongly marked varieties—the clay-soil-polder region, the sandy region, the sandy-loam region, the loam region, the calcareous and carboniferous region, the schistose and quartz-clay region of the Ardennes, and the Jurassic region, of Luxembourg, of clay, calcareous and sandy soil. The fertility of the soil differs in an essential degree in the various regions. Thus, in East Flanders, in the sandy-loam region, in favorable seasons, the average crop of wheat to the acre is 26 bushels, while in Luxembourg, mainly in the schistose and quartz-clay region, it is only 12 bushels. In East Flanders the average crop of rye is 25 bushels to the acre, while in Luxembourg it is only 10½ bushels. In Hainaut the average crop of oats is 48 bushels to the acre, while in Luxembourg it is only 31 bushels. Taken as a whole Belgium has not been favored by nature with a very fertile soil. Of its entire surface, 7,278,842 acres, about 2,045,000 acres are sandy and naturally unfertile, 1,050,000 acres of the schistose and stubborn soil of the Ardennes, and 1,117,500 acres of a cold clay soil, thus leaving only a little more than a third, 3,050,000 acres, of really good and fertile soil.

Notwithstanding these natural disadvantages intelligent and well-directed labor has rendered it the best cultivated and most productive country in Europe, and what is most remarkable is that this agricultural superiority is owing to the extraordinary perfection to which cultivation has reached in East and West Flanders, that portion of its territory by nature the least fertile. This triumph over nature has been brought about by extensive fertilization, judicious rotation of crops, and the most careful and laborious culture. Belgium imports 154,000,000 to 176,000,000 pounds of guano annually, much the largest portion of which is employed in the two Flanders, and *every* year there is an average of from \$6.40 to \$8 expended for the purchase of fertilizers per acre in these provinces, a sum believed to be greater than that expended in any other country in the world. In the Flanders the land is principally tilled by the spade, a manner of cultivation that produces the highest possible results. The power of Belgium as a productive country agriculturally and industrially is measured by the fact that she nourishes a population of 190 per 250 acres (100 hectares), while in East and West Flanders it reaches to 250 per square kilometer, a little over one half square mile. With the same density France would have a population of from ninety-eight to a hundred million.

A peculiar feature of agriculture in Belgium is the extreme subdivision of the land. In West Flanders the tracts average 8½ acres, and in East Flanders 6 acres. In West Flanders there are 45,072 tracts, or 57

per cent. of the whole, which do not exceed  $1\frac{1}{4}$  acres in extent, and in East Flanders there are not a hundred which exceed 50 acres, and hardly one of a 1,000 of more than 125 acres, while in the two provinces there is hardly one in 5,000 which exceed 250 acres. In the entire Kingdom 92 per cent. of the tracts cultivated are less than 25 acres,  $7\frac{1}{2}$  per cent. between 25 and 125 acres, and only three-fourths of 1 per cent. over 125 acres, while farms of 250 acres are exceedingly rare, there not being one of a 1,000 of that size. In the whole Kingdom there are 910,396 parcels or farms cultivated with an average size of 7 acres. I am assured by good authority that in the two Flanders a man will support his family upon the profits derived from the cultivation of a tract of 6 acres. The small tracts so extensively found, and where very often the spade is used in cultivation, employ a large number of laborers. Thus in West Flanders it is sixty-five persons to 250 acres. In East Flanders one hundred and three persons to 250 acres, while in England it is estimated to be only thirty persons, in France forty, and in Ireland sixty. The small tracts ordinarily rent for 10 per cent. more than the large ones.

*Tenure of land.*—Of the agricultural land, consisting of 910,396 tracts, 293,524, consisting of 3,586,112 acres, are cultivated by the proprietors, and 616,872 parcels, consisting of 3,176,277 acres, by tenants.

*Customary rent.*—The following table gives the average value and rental of land per acre in the various provinces; also for the entire Kingdom for the year 1880. No general statistics of a later date exist.

Provinces.	Value of land per acre.	Rental per acre.
Antwerp .....	\$221 00	\$6 00
Brabant .....	400 80	10 85
West Flanders .....	423 19	9 18
East Flanders .....	429 15	10 18
Hainaut .....	420 52	11 20
Liege .....	392 80	10 92
Limbourg .....	201 10	6 40
Luxembourg .....	114 72	3 40
Namur .....	220 63	5 94
Average for Kingdom .....	313 77	8 23

These averages are doubtless considerably less now than in 1880, owing to the severe agricultural crisis which has existed for a number of years.

*Conditions of labor.*—As to the general conditions of labor, it possesses no peculiar characteristics. As a class the laborers are industrious, faithful, patient, and economical. During the week days they indulge to a very limited extent in the use of intoxicating drinks, but on Sundays many of them indulge to excess.

*Tools and implements.*—The agricultural tools and implements in general use are plows, harrows, hoes, sickles, and spades, the latter very long, having a blade 14 inches in length and 9 inches in breadth, principally manufactured in England and Germany.

*Machines.*—The use of machines is very limited, owing to the price and the existence of such a large number of small tracts cultivated. The spirit of routine also, which leads the son to follow in the ways of his father and use the implements he inherited from him, is also a serious impediment to their adoption.

In 1880, the latest date of statistics upon this point, with 910,396 parcels of cultivated land, there were in the Kingdom 6,930 thrashing

machines, 423 agricultural locomobiles, 1,015 reaping machines, 422 mowers, 296 faneuses, 1,300 horse rakes, and 1,835 horse sowing machines. In some portions of the Kingdom the use of machines has considerably increased, principally owing to the advance in the price of labor and the diminution in the number of laborers, caused by the emigration to the large cities and industrial centers. It is to be expected that a continuation of the same causes, and a better appreciation of the advantages to be derived from their use, will cause a growing demand. By far the largest part of agricultural machines used in Belgium are manufactured in the United States.

*Wages and mode of payment and hours of labor.*—The total agricultural population of the Kingdom in 1880 was 1,199,319, viz, 671,435 men and 527,884 women, making an average of about 60 to 250 acres. The following table gives the average wages of male and female laborers, with and without board. The wages are paid in cash. Twelve hours constitute a day's labor.

*Average wages of agricultural laborers per day of twelve hours.*

Provinces.	With board.		Without board.	
	Men.	Women.	Men.	Women.
	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>
Antwerp .....	19.3	11.6	29.0	19.3
Brabant .....	19.8	13.0	34.0	21.0
West Flanders .....	18.9	13.0	35.3	22.3
East Flanders .....	16.0	10.2	31.8	20.6
Hainaut .....	26.0	14.2	46.5	23.9
Liege .....	28.3	16.8	47.2	28.0
Limbourg .....	17.0	10.6	31.2	21.4
Luxembourg .....	29.7	17.7	48.0	31.2
Namur .....	32.8	16.6	51.5	27.8
Average, Kingdom .....	23.3	13.7	46.3	24.0

The average prices, avoiding fractions, for the entire Kingdom in 1850, 1856, and 1874 were as follows:

Years.	With board.		Without board.	
	Men.	Women.	Men.	Women.
	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>
1850 .....	13	8	23	14
1856 .....	15	9	26	16
1874 .....	22	13	39	23

*Subsistence of laborers.*—I am unable, for the reasons already named, to give any reliable statement of the subsistence of agricultural laborers, with the quantity and cost of clothing for one year. Additional reasons consist in the facts that, with hardly an exception, the agricultural laborers raise their own vegetables, for the most part their own butter and eggs, and in a very large majority of cases eat no meat but pork raised by themselves.

The following prices of articles of wearing apparel, articles of food, &c., may be regarded as substantially correct: Men's coarse woollen

suits, \$3 to \$4; men's cotton and woolen suits, \$2.50 to \$3; shoes, \$1.75 to \$2.25; common shirts, 47 cents; Sunday shirts, 94 cents.

Articles.	Price.	Articles.	Price.
	<i>Cents.</i>		<i>Cents.</i>
Chicory.....per pound.	5 to 6	Cow beef, fresh.....per pound.	15
Rice.....do.	4 to 5	Ox beef.....do.	17
Coffee, common.....do.	16	Mutton.....do.	18
Sugar, brown.....do.	12	Veal.....do.	18
Salt.....do.	1	Pork.....do.	1
Pepper.....per ounce.	1	Horse meat.....do.	9 to 10
Sirup.....per quart.	15 to 20	Soap.....do.	4
Bacon.....per pound.	16 to 20	Candles.....do.	8
Ham.....do.	30	Petroleum.....per quart.	3
Lard.....do.	18		

The ordinary food of the laborer is composed of potatoes, wheat, or rye and wheat bread, lard, vegetables in the form of soup, and in time of harvest a little pork. Butter from cow's or goat's milk is a luxury attainable but by few, one or two pounds a week for a family, when used at all, being considered as a large supply. Laborers are often the owners of the houses they occupy, with small gardens attached. The houses are generally composed of a kitchen, a room occupied during the day and used at night for a sleeping-room on the lower floor, and two sleeping-rooms above. Where rented, the rental of such a house is from \$2 to \$3.50 per month.

*Unit of labor.*—I regret to say that I find it practically impossible to give a reliable statement of the cost of labor in the production of an agricultural unit, "say 2,000 pounds of grain." The agricultural statistics of Belgium, which are remarkably exhaustive, have never attempted the solution of this question. Three great difficulties encountered consist in the difference in the amount of labor required to produce such a unit, the difference in the price of labor, and the difference in the crop produced. Take wheat for example: The average crop in East Flanders is 26 bushels to the acre, while in Luxembourg it is only 12 bushels. Of rye the yield in East Flanders is 25 bushels, while in Luxembourg it is only 10½ bushels. Of oats the production per acre in Hainaut is 48 bushels, while in Luxembourg it is only 31 bushels. As to the difference in the amount of labor involved in the cultivation of land with the spade and the plow, it will, I apprehend, be easily understood. A material difference will also be found in the wages paid the laborers. Thus, in the province of Namur the average rate is 51 cents per day, while in Antwerp it is only 29 cents.

Thus assuming that even the same amount and value of labor is required per acre in East Flanders and Luxembourg, the unit produced will cost much more in the latter than in the former. The unit produced in Namur and Antwerp, all other things being equal, will also largely differ in value by reason of the great difference in the price of labor. It will thus be seen that no absolutely uniform and reliable unit can be established for the Kingdom, even if no other difficulties were to be encountered. But another very grave one consists in the fact that a farm where only one single crop is raised is rarely, if ever, found; consequently at one moment labor is devoted to one portion of the farm and at another moment to another.

Fractions of days may be given to the cultivation of any one crop, and several entire days to the cultivation of another. The labor of the

wife and the younger members of the family would also tend to complicate the question, rendered as it is often for fractions of days. No farmer can hardly be supposed to keep an account of the amount and value of the labor bestowed upon this or that crop and of the greater or less labor of the members of his own family, and any attempt to re-establish such an account would furnish a result of the most unreliable nature. I have the authority of a gentleman of high intelligence, and than whom no man is more thoroughly posted in all that concerns agriculture in Belgium, for saying that the establishment of a satisfactory and reliable agricultural unit, such as your circular seeks, is practically impossible.

*Milling.*—There are three descriptions of mills in Belgium: Steam-mills found in cities, water-mills in the hilly and mountainous part of the Kingdom, and windmills in the flat part. The machinery presents no points of special interest.

*Taxes.*—The national tax upon land is simply 7 per cent. upon the *net* revenue, and 5 per cent. additional upon the tax itself. Thus upon each *net* revenue of \$100 the tax is \$7, the additional 5 per cent. making it \$7.35. Provincial and communal taxes vary so widely that no reliable data can be given. Buildings are taxed separately from the land. The tax is 4 per cent. upon the rental value. In addition to this doors and windows are taxed upon a sliding scale from 16 to 45 cents each, depending upon the aggregate population of the commune. Chimneys are also taxed upon a sliding scale from 16 to 30 cents each, based upon the number used. Domesticates are also taxed upon a sliding scale from \$1.20 to \$2.75 each, depending upon the number employed. Newly constructed buildings are exempted from tax for certain periods, depending upon whether constructed upon land where for three or five years before there was no building, and to replace buildings destroyed by flood or fire, or where constructed on communal land.

*Tariff.*—No duty is levied upon the importation of grains, including wheat, rye, barley, corn, oats, and rice.

*Exportation.*—Belgium produces no agricultural product that is largely exported.

*General observations.*—A severe agricultural crisis has existed in Belgium for several years past, and as a result the value of land has depreciated from 25 to 33 per cent. At the present time the net revenue from land has diminished in very many instances from 50 to 60 per cent., and in numerous instances the cultivation has been entirely abandoned. As to the causes of this crisis opinions widely differ. The landed proprietors claim that it is owing to free trade in cereals, and that the only way to re-establish agricultural prosperity is by tariff upon their importation. This proposition is, of course, opposed by the working classes, to whom cheap bread is the great desideratum. At the last session of the legislative assembly a tariff law was introduced, but by a very considerable majority failed on its passage. It is probable the attempt will be renewed, with what result no one can forecast.

Unquestionably the largely increased importation of cereals has materially contributed to the agricultural depression. Thus, in 1873, Belgium imported 1,425,559,924 and exported 412,531,253 pounds, making an excess of imports of 1,013,028,671 pounds, while in 1883 she imported 2,882,792,160 and exported 1,091,171,002 pounds, making an excess of imports of 1,791,621,158 pounds, and an increase for 1883 over 1873 of 778,592,487 pounds, a much larger proportional increase than that of the population during the same period.

In the following table will be found the agricultural products of the Kingdom for 1880, with their values. I have not been able to procure these general statistics of a later date:

Nature of product.	Value.	Nature of product.	Value.	Nature of product.	Value.
Wheat .....	\$39,174,544	Peas .....	\$1,032,656	Garden vegeta- bles .....	\$7,944,800
Spelt .....	4,694,375	Hemp .....	280,963	Potatoes .....	25,916,475
Meslin .....	3,272,267	Flax .....	13,943,454	Unenumerated items .....	46,057,108
Rye .....	30,925,138	Hops .....	2,680,879	Fruits .....	9,000,000
Barley .....	4,581,394	Sugar beets .....	4,491,475	Total .....	272,344,998
Oats .....	24,783,636	Different varie- ties of clover .....	19,846,144		
Buckwheat .....	967,888	Hay .....	31,074,380		
Beans .....	1,668,442				

In 1880 the total cereal crop was 13,614,233 hectoliters, or 38,637,193 bushels, from which deducting for seed 1,177,591 hectoliters and for breweries and distilleries, 712,100 hectoliters, leaves for consumption 11,724,542 hectoliters or 33,274,250 bushels; which gives per inhabitant 2.12 hectoliters, or 6 bushels. But as the average consumption per inhabitant per year is calculated to be 3 hectoliters, this leaves a deficit of at least 88 liters per inhabitant, or 4,857,600 hectoliters=13,785,869 bushels. It is calculated that on an average Belgium has a deficit of cereals of about 5,000,000 hectoliters, or 14,190,000 bushels.

The following table shows the average prices of grain from 1871 to 1883 per 100 kilograms=220 pounds:

Years.	Wheat.	Rye.	Spelt.	Oats.	Barley.
1871 .....	\$7 25	\$5 21	\$5 47	\$4 41	\$4 92
1872 .....	6 67	4 05	4 79	3 19	3 80
1873 .....	7 10	4 60	4 82	4 40	4 78
1874 .....	6 61	4 95	4 83	5 06	5 04
1875 .....	5 24	4 00	3 97	4 63	4 51
1876 .....	5 61	4 06	4 28	4 57	4 31
1877 .....	6 52	4 06	4 79	4 36	4 55
1878 .....	5 75	3 97	4 07	4 06	4 65
1879 .....	5 45	3 83	3 92	3 80	4 38
1880 .....	5 71	4 45	4 04	3 95	4 32
1881 .....	5 71	4 59	4 17	3 96	4 22
1882 .....	5 42	3 64	4 16	3 74	4 22
1883 .....	4 90	3 47	3 53	3 54	3 85

#### PRODUCTS OF MINES.

**Coal.**—The soil of Belgium is traversed from southwest to northeast by very important coal-beds. These beds are on one side the continuation of the north French coal region, and on the other side rejoin the German basin of Eschweiler. The total length of the Belgian coal region is about 115 miles, covering a superficial area of 357,193 acres. This region is divided into two districts, one the "West Basin," found in the provinces of Hainaut and Namur; the other, the "East Basin," in the province of Liege. As the latter is not in this consular district, I shall confine my report to the former, by far the most important of the two; as out of 18,177,754 Belgian tons (of 2,200 pounds each) extracted in the entire Kingdom in 1883, Hainaut produced 13,497,113, and Namur, in the same region, 485,450 tons.



In the year 1883 there were worked in the province of Hainaut 84 mines, with 201 pits of extraction, employing 79,129 laborers, divided as follows :

Laborers.	In the mines.	On the surface.
Men .....	45,852	12,538
Women .....	4,244	2,240
Boys under 16 years of age .....	7,568	1,990
Girls under 16 years of age .....	2,658	2,044
Total laborers .....		79,129

They extracted during the year 13,497,113 Belgian tons, the average selling price of which was \$1.98 per ton. The entire value of the product was \$26,731,189.98. During the same time the running expenses were \$25,984,299.28, thus leaving a net profit of \$746,890.70, being a net profit per ton of 5½ cents.

In 1884 the extraction in the same province was 13,510,996 tons, the average selling price being \$1.87 per ton.

The following table will show the annual production since 1875, the selling value, the expenses of extraction, with the loss or profit of each year :

Years.	Production.	Value of product.	Total expenses.	Profit.	Loss.
	<i>Tons.</i>				
1875 .....	10,968,175	\$34,656,207	\$32,626,634	\$2,029,573	.....
1876 .....	10,486,680	29,034,080	28,349,554	684,526	.....
1877 .....	10,259,374	23,054,386	22,895,021	159,365	.....
1878 .....	11,003,423	22,368,236	22,199,286	169,000	.....
1879 .....	11,448,531	21,841,618	21,712,901	128,717	.....
1880 .....	12,548,507	25,472,708	24,900,928	571,780	.....
1881 .....	12,554,506	24,590,560	24,646,883	.....	\$56,328
1882 .....	13,131,342	26,557,210	25,626,157	931,053	.....
1883 .....	13,497,113	26,731,190	25,984,299	746,891	.....
1884 .....	13,510,996	25,925,887	24,979,089	946,298	.....

Notwithstanding the constantly increasing depth of the pits there has been since 1876 a steadily increased production. The average production per pit is as follows :

Years.	Tons.	Years.	Tons.
1876 .....	52,963	1881 .....	64,714
1877 .....	54,282	1882 .....	65,330
1878 .....	56,428	1883 .....	67,150
1879 .....	59,319	1884 .....	70,370
1880 .....	63,058		

The entire number of pits is 194. Their depth is as follows :

Less than 658 feet, 9; 984 to 1,315 feet, 29; 1,640 to 1,968, 39; 2,297 to 2,625 feet, 12; 2,953 to 3,281 feet, 1; between 658 to 934 feet, 15; 1,315 to 1,640 feet, 34; 1,968 to 2,297 feet, 45; 2,625 to 2,953 feet, 12.

Of the laborers employed there was, from 1883 to 1884, an increase of 499 men and 794 women, and a decrease of 927 boys and 509 girls. The decrease of girls in three years was 1,342.

In 1884, in Namur, fifteen mines with nineteen pits of extraction were worked, employing 2,752 laborers, as follows :

Laborers.	In the mines	On the surface.
Men .....	1,643	580
Women .....	55	108
Boys under 16 years of age .....	253	76
Girls under 16 years of age .....	13	74

They extracted during the year 477,439 tons of coal ; the average selling price of which, at the pit, during this period was \$1.37 per ton.

The total value of the product was \$656,367.52 ; running expenses during the year, \$735,162.67, thus leaving a deficit of \$78,795.15 for the year, or 16½ cents on each ton.

No great difficulties are encountered in the working of the mines, and the method of working offers no points of special interest. While the coal of all the mines is bituminous, there is a difference in its bituminous quality, the quality called "gras" (fat) possessing much more bitumen than the quality called "maigre" (lean). Hence the former is used more extensively in the manufacture of gas.

*Rents or royalty.*—The Government collects a tax of \$1.93 upon every square kilometer (about five-eighths of a square mile) of the surface and a royalty of 2½ per cent. upon the net profits of the exploitation.

*Machinery.*—In hoisting, steam-machinery is used of the ordinary kind, and which merits no particular attention.

*Wages.*—The average wages per diem are as follows :

Laborers.	Interior. Surface.	
	Cents.	Cents.
Men .....	70	54
Women .....	37	31
Boys .....	85	26
Girls .....	27	21

The boys and girls are under sixteen years of age. Ten hours constitute a day's labor. In Hainaut at the present time, owing to the great depression in the coal interest, many of the miners are worked only three or four days in the week. This partial suppression of work is causing great suffering among the employés.

*Subsistence of laborers.*—While I am unable, for reasons already stated, to give a reliable and detailed account of the subsistence of miners in general, I have been able to obtain from a reliable source the following statements of the earnings and expenses of three miners employed in the mines near Mons. It will be observed that, although each family is composed of the same number of persons, the monthly expenses differ; and, of course, the difference would be still more marked if in any one case there were no children, in another one or two, and in another four.

The ages of the children would also constitute an element of difference in the expenses.

P— L— has a wife and four children, one over twelve years:

The miner's earnings per month.....	\$16 80
Son's earnings .....	3 00
Wife's earnings (not in mines).....	1 94

Total earnings .....	21 74
----------------------	-------

Expenses per month:

Rent .....	\$1 58
Clothing (average).....	2 94
Boots and shoes (average).....	2 04
Meat .....	1 00
Vegetables.....	1 67
Bread .....	7 52
Butter, eggs, milk, beer, coffee, petroleum, &c.....	6 26
Bedding (average) .....	48
Coal.....	1 17

Total expenses.....	24 96
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In this case it will be perceived that the miner and his family expend more money than they earn. Such cases are rare, but sometimes occur, resulting from various causes. Of course the deficit if not paid from previous savings must result in the creation of debt.

L— G—, wife, and four children under twelve years:

He earns as miner per month.....	\$16 54
During the agricultural season he and his wife, by field labor during the early and late hours, earn an average per month .....	3 34

Total per month .....	19 88
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Expenses per month:

Rent .....	\$1 56
Clothing (average).....	1 80
Boots and shoes (average).....	1 16
Bedding (average) .....	30
Meat .....	98
Vegetables (raises his own) .....	00
Bread .....	5 83
Butter, milk, coffee, spices, petroleum, &c .....	6 30
Coal.....	1 17
Savings-bank deposit .....	40

Total expenses.....	19 50
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J— B— L—, wife, and four children, one over twelve years old:

He earns per month in mine .....	\$22 58
He cultivates about three-fourths of an acre, from which he produces a monthly average of .....	2 59

Total earnings per month .....	25 17
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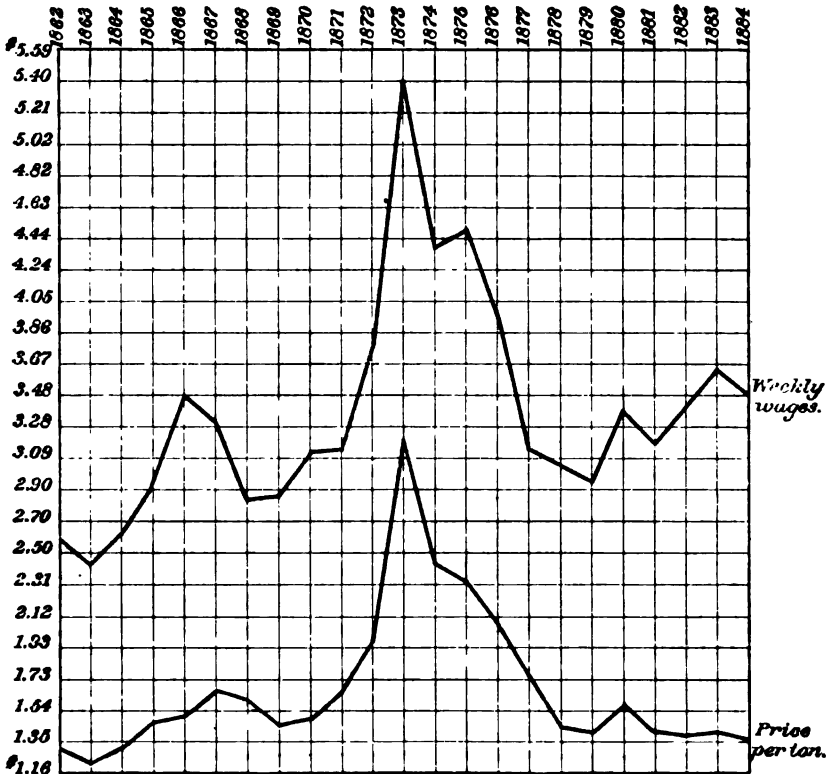
Monthly expenses:

Rent .....	\$1 86
Coal.....	1 15
Clothing (average) .....	2 19
Boots and shoes (average).....	1 38
Bedding (average).....	56
Meat .....	1 25
Bread .....	6 70
Butter, beer, coffee, spices, petroleum, &c.....	8 70
Deposit in savings-bank.....	80

Total expenses.....	24 61
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*Cost of unit.*—In Hainaut the average cost of labor for one ton (Belgian, 2,200 pounds) of coal put upon the surface was, in 1882, \$1.09, and in 1883, \$1.14

In Namur in 1883 it was \$1.01, and in 1884, \$0.99. The following diagram illustrates in a very clear and condensed manner the rise and fall in the weekly wages of miners and the fluctuations in the selling price of a ton of coal from 1862 to 1884, inclusive:



**Taxes.**—There is no local tax upon coal production, and no duty upon its importation.

**General observations.**—The entire coal production in 1883 in Belgium was 18,177,754, and in 1884, 18,051,499 tons, a decrease of 126,255 tons.

The exportations in 1883 were 5,816,195, and in 1884, 5,788,606, a decrease of 27,589 tons.

The exportations in detail in 1884 were as follows:

	Tons.
France .....	4,331,210
Netherlands .....	120,033
Other countries .....	157,363
<b>Total .....</b>	<b>4,608,606</b>

In this statement is included the quantity of coal reduced to coke, the exportations of which in 1884 were as follows:

	Tons.
France .....	772,926
Duchy of Luxembourg .....	73,051
Other countries .....	3,529
<b>Total .....</b>	<b>849,506</b>

The importation of coal in 1883 from England, France, Germany, Netherlands, and other countries was 1,257,790 tons, and in 1884, from same countries, 1,221,676 tons, a decrease of 50,384 tons.

The exportations are by water. The cost to Paris is \$1.72 per ton.

#### IRON MINES.

*Description.*—The iron mines in this consular district are found in the province of Namur, in the valley of the Meuse. They produce two descriptions of ores: the oligiste ore (poor in metal), found in veins varying from 16 to 63 inches in thickness, and the hydrate of iron, which is found in lumps near the surface. The majority of the mines producing the oligiste ore consist of galleries running from the banks of the river from 30 to 45 feet above its bed into the side of the hill. From these main galleries radiate from both sides smaller ones following the veins of ore. This ore is very difficult to extract, as it is generally found in a rocky formation, and to detach it necessitates the frequent use of explosives.

The hydrate ore can hardly be said to be extracted from mines, for it is found very near the surface. It is taken from pits dug from 10 to 15 feet deep and raised to the surface by a windlass worked by hand. The ore and earth are emptied into a trough at the mouth of the pit and washed by water artificially conducted. The proportion of ore is about 50 per cent. in weight and 33 per cent. in bulk.

In 1884 there were 6 mines producing oligiste ore worked, employing 274 men and 7 boys under sixteen years of age. They produced 44,790 tons (of 2,200 pounds), valued at \$1.67 per ton, \$74,793.60; all expenses, including labor, \$46,522, leaving a net profit of \$28,271.60. During the same year there were worked 32 pits producing hydrate ore, employing 86 men. They produced 10,470 tons of washed ore, valued at \$1.80 per ton, making a total of \$18,846. The total running expenses during the same period were \$13,160, leaving a net profit of \$5,686. The oligiste ore, which is highly phosphorous, yields from 48 to 50 per cent. of iron, and is said to be essentially the same as that found in some parts of the United States. The hydrate ore yields from 30 to 35 per cent. and produces an iron of a superior quality.

Of the oligiste ore there was a diminution in quantity from 1883 to 1884 of 27,415 tons, and of value \$49,083.40; of the hydrate ore there was a diminution in quantity for the same period of 9,803 tons and of value \$15,153. The total diminution of the two classes of ore from 1883 to 1884 it will thus be seen was 37,218 tons, and in value \$64,236.40. The number of laborers employed in 1884 was more than 50 per cent. less than in 1883.

The steady diminution in quantity and value of iron ore in Namur from 1875 to 1884, inclusive, will be seen by the following table:

Years.	Product washed ore.	Value.	Years.	Product washed ore.	Value.
	<i>Tons.</i>	<i>Francs.</i>		<i>Tons.</i>	<i>Francs.</i>
1875 .....	217, 738	2, 514, 178	1880 .....	121, 810	1, 091, 872
1876 .....	175, 799	1, 858, 224	1881 .....	122, 832	1, 127, 627
1877 .....	161, 522	1, 702, 974	1882 .....	120, 801	1, 020, 170
1878 .....	133, 089	1, 836, 746	1883 .....	82, 478	801, 751
1879 .....	112, 350	1, 106, 422	1884 .....	55, 260	468, 197

In depth the mines vary materially, the maximum being 650 feet.

*Royalties.*—Most mines are worked by incorporated companies who are also the owners of smelting furnaces. For oligiste ore the royalty paid the proprietor is from 40 to 80 cents per ton of ore and for hydrate ore about 10 cents per ton.

*Kind and description of machinery.*—I have failed to procure such a technical description of machines used in the exploitation of iron mines as would prove satisfactory or useful. To obtain it, even if permission was granted by the companies working the mines, would require the service of an *expert*, and one able to translate into English the many technical words and terms involved in the description. Such a person it would be very difficult to find, and if found he would demand to be paid for his labor.

*Kind and cost of fuel.*—The fuel is coal, and costs from 6 to 8 francs per ton delivered at the mines.

*Wages and hours of labor.*—Twelve hours constitute a day's labor. In the oligiste mines the average pay of men is 48 cents per day and of boys under sixteen years 28 cents. The laborers in the majority of the hydrate pits are paid so much per ton for ore extracted, their average earnings being for men about 52 cents and boys 28 cents per day.

*Subsistence of laborers.*—The laborers in the mines of Namur live better than perhaps in any other province of Belgium. Many of them own the houses they occupy, and from small gardens attached raise their own vegetables. Meat is more frequently eaten than in other manufacturing localities, but is not prepared by roasting or baking. It is cut in small pieces and cooked with potatoes, cabbage, carrots, turnips, &c., and forms a kind of thick soup. Unmarried men get their board and lodging for from 34 to 39 cents per day. Coffee and bread and butter constitute the morning meal, the meat-and-vegetable soup with bread and beer the dinner, and coffee or beer, bread, cheese or eggs, and vegetables the supper. As a class the laborers are intelligent, and most of them can read and write. Their moral condition is good. They use more beer than alcoholic drinks, except on Sundays, when they frequently drink to excess.

The prices of the necessities of life differ little from the prices in the table already given under the head of "Agriculture." Clothing is cheap; a coarse suit of woolen goods costs from \$3 to \$4. For summer wear a suit manufactured from jute or hemp can be had for from \$1 to \$1.60. Their shoes are thick and heavy, the soles filled with nails, and costing from \$2 to \$2.30 a pair. All other things being equal as to the number of persons in the family, ages, &c., the monthly expenses already given for three miners in the coal mines may be regarded as substantially correct for the same number of miners in the iron mines. At the same time I cannot say that the average expenses of the three families given can or should be regarded, for the reasons already stated, as a certain and unflinching average for a large number, say a hundred families. It would, I think, differ, but whether it would be more or less I am unable to say. The houses they occupy are generally outside of cities, and often at a considerable distance. They are mostly one story, containing from 3 to 4 rooms and a mansard. They all have a garden attached, cultivated by the wife and older children, and where rented cost from \$38 to \$48 per annum.

It might be supposed that the expense incurred in going to and returning from their labor, a distance frequently of from 15 to 20 miles, would render living in the city less expensive than in the country; but such is not the fact. The Government, which owns the railroads, affords laborers special and exceptional facilities, selling them tickets for one

week, going and returning, for the small sum of 39 cents, less than 7 cents per working day. The beneficial effects of this system are manifest: It keeps the workman at home in the evening, removes him from the contaminating influence of a city, and the temptations which in the shape of drinking shops he encounters at every step. He is as a general rule better lodged, can raise his own vegetables, and lives cheaper than in a city. Besides, he is often able to rent at a very small rate what is called "communal" land, and which, cultivated by his wife and children, is the source of some revenue. Thus living, an industrious and economical laborer not unfrequently is able to lay aside something every year for old age or for unforeseen contingencies.

*Cost of unit.*—As near as I am able to arrive at it the cost of labor in the production of a ton (2,200 pounds) of oligiste ore is 99 cents, and of hydrate ore 69 cents. The quality of both kinds are good, and is used in the making of ordinary pig-iron.

*Local taxes and tariff.*—There are no local taxes, nor is there any duty upon the importation of foreign ore.

*Where sent.*—The ores of Namur are sent by rail or water to Charleroi and Liege for conversion. The freight to Charleroi varies from 29 to 46 cents per ton; to Liege from 29 to 57 cents.

*General observations.*—From the following table it will be seen that the production of iron ore in Belgium has in the main been steadily decreasing from the year 1874. During the same years there has been with occasional halts a steady depreciation in values:

Years.	Pyrite of iron.		Iron ore.		Total value.
	Quantity.	Value.	Quantity.	Value.	
	<i>Tons.</i>		<i>Tons.</i>		
1874 .....	28, 872	\$155, 600	527, 300	\$1, 035, 600	\$1, 191, 200
1875 .....	30, 747	161, 400	365, 044	684, 600	846, 000
1876 .....	23, 588	113, 200	269, 206	491, 690	604, 800
1877 .....	26, 207	127, 800	234, 227	431, 600	559, 400
1878 .....	21, 721	104, 600	207, 167	351, 600	456, 200
1879 .....	15, 577	64, 800	195, 212	315, 400	380, 200
1880 .....	7, 913	32, 800	253, 499	375, 000	407, 800
1881 .....	2, 965	9, 800	224, 982	363, 400	373, 200
1882 .....	2, 555	4, 200	209, 212	318, 600	322, 800
1883 .....	1, 623	3, 600	216, 490	299, 400	303, 000

In all the mines in the Kingdom—zinc, lead, and iron—the number of laborers employed has diminished from 6,131 in 1874 to 2,100 in 1883. In this consular district no zinc or lead mines were worked in 1884. In 1883 the blast furnaces of the entire Kingdom consumed 1,833,823 tons of ore, of which 1,641,515 were imported, principally from Spain, at a cost of from \$1.54 to \$1.74 per ton.

#### SMELTING FURNACES.

As will be perceived the information upon "smelting furnaces" is not of that detailed and comprehensive character called for by your circular. The information solicited has been in some instances flatly refused, either without any reasons being given or upon the ground of the labor it would involve; in others, for the reason that the same information had been but recently communicated to a special agent of the United States Bureau of Labor and a consequent unwillingness to repeat it.

The depression at present in this branch of industry in Belgium is intense, of thirty six establishments in the province of Hainaut, only eighteen being in active operation. Of one of these I am able to give the following details :

With two smelting furnaces it produces every twenty-four hours 80 tons (2,200 pounds each) of first quality pig used in foundries.

It employs 177 workmen, earning, monthly, \$3,475, or an average of \$19.59 per month to each man.

The wages of the several classes of workmen per day are as follows :

Coke ovens.....		\$0 68
Ordinary laborers.....	\$0. 52 to	58
Furnace men.....	87 to	97
Machinists.....	87 to	97

The furnace does not cease its operations on Sundays.

The workmen are divided into two "gaugs," working alternately twelve hours each.

The cost of labor in the production of the "unit" (a ton of pig) is about \$1.60.

As to the machinery employed I am unable to give any detailed and reliable description.

The establishment consumes 3,600 tons of coke per month, the extraction of which requires 4,700 tons of coal, which costs, delivered, about \$1.94 per ton. The pig-iron produced is mainly consumed in Belgium and France. The selling price is from \$14.47 to \$15.44 per ton. The import duty into France is \$2.90 per ton. The duty upon all qualities of pig-iron imported into Belgium is 96 cents per ton.

The ore consumed is mined in Belgium and costs, delivered, from \$1.64 to \$2.30 per ton.

The taxes and impositions of all descriptions of the establishment amount to about \$775 per annum.

As for subsistence of workmen, cost of clothing, rent, &c., all other things being equal, the detailed statements, given under the head of "Coal Mines," of cost of living of miners may be regarded as substantially correct for the operatives in smelting furnaces.

#### GENERAL OBSERVATIONS.

In 1872-'73 and '74, owing to the Franco-German war, the iron industry of Belgium experienced an immense inflation. New mines were dug and new manufactories erected. A reaction followed and prices fell to a very low figure, reaching their minimum in 1879. A short period of rise in prices then succeeded, followed again by a depression, which has continued up to the present, prices being now lower than in 1879.

The following table gives the production in the province of Hainaut from 1880 to 1884, inclusive, of pig used for forge and for foundry purposes, the value of each description, and the aggregate value :

Years.	Production of pig-iron.			Value of the pig.		
	Forge.	Foundry.	Total.	Forge.	Foundry.	Total.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>			
1880.....	311, 140	26, 695	347, 835	\$3, 564, 138	\$524, 950	\$4, 089, 088
1881.....	316, 783	40, 171	356, 954	3, 325, 550	554, 740	3, 880, 290
1882.....	362, 068	40, 050	402, 118	3, 897, 820	581, 180	4, 479, 000
1883.....	400, 473	24, 400	424, 873	4, 148, 260	352, 900	4, 501, 160
1884.....	381, 000	13, 300	394, 300	3, 414, 200	180, 000	3, 594, 200



The following table gives the entire exportation, in tons of iron of all kinds from Belgium from 1880 to 1884, inclusive, with countries to which exported. These exportations consisted principally of finished products, rolled iron, rail, steel, sheet-iron, &c.

Countries.	1880.	1881.	1882.	1883.	1884.
France and colonies .....	43,000	77,000	117,000	82,000	52,000
Holland .....	52,000	73,000	94,000	91,000	85,000
England .....	61,000	50,000	44,000	51,000	58,000
United States .....	55,000	49,000	30,000	31,000	25,000
Russia, Sweden, &c .....	22,000	17,000	21,000	21,000	19,000
Spain .....	25,000	25,000	42,000	34,000	26,000
Italy .....	27,000	48,000	40,000	41,000	50,000
Balkans .....	12,000	13,000	15,000	13,000	18,000
South America .....	15,000	16,000	12,000	14,000	20,000
Extreme eastern countries .....	29,000	11,000	29,000	32,000	37,000
All other countries .....	22,000	21,000	24,000	26,000	31,000
Total tons .....	368,000	400,000	468,000	436,000	421,000

The importations for same years, almost exclusively of pig-iron from England and Germany, were, for 1880, 260,000; 1881, 243,000; 1882, 228,000; 1883, 216,000; and 1884, 169,000 tons.

#### TEXTILE FABRICS.

I am mainly indebted for the following information in reference to textile fabrics to the kind services of Monsieur Karl Schäfer, "directeur-général de la Société anonyme de Loth," who communicated it cheerfully, and whose kindness and promptness I regard as worthy of mention.

The corporation above named, with a capital of \$579,000, and whose establishment is situated about 10 miles from Brussels, is engaged in the manufacture of merinos, cashmeres, satins (de chine), cheviottes, serges, knitting yarn, &c. The amount of its sales, which in 1877 was \$773,396, has increased yearly, amounting in 1884 to \$1,649,124.

Its entire profits in 1884, after deduction of \$52,000 for depreciation of buildings and machinery, were \$79,310, and it divided to its stockholders 7½ per cent.

The establishment employs about 1,600 workmen. Their wages are paid half-monthly, 2 per cent. being retained, constituting a "fund for their relief" in case of sickness, during which they receive half wages and gratuitous medical aid.

This fund is administered by the workmen themselves, who in addition have a savings bank into which they pay a certain annual sum, entitling them to support in old age. The corporation contributes annually to this fund. The establishment pays all charges in case of accident to any of its workmen, and has a school where the children of the operatives are gratuitously educated. No strike has ever occurred by reason of any question of wages.

Houses for the workmen are owned by the company and rented at a low rate, houses with four rooms (differing in size) renting for from \$0.77 to \$1.15 per month.

*Plant.*—No exact statement can be given of the separate cost of land and buildings. The estimated amount for land and buildings is \$342,000; for machinery, \$300,000; for all other items, \$19,000; making a total of \$661,000.

*Constructions.*—(1) Building of three stories for washing, carding, combing, and spinning woollen knitting yarn; (2) building of five stories; 260 by 49 feet, for spinning wool for cloth; (3) building of one story, covering a surface of over 8,000 square yards, for weaving; (4) building

of one-story for dyeing; two other small buildings, used for assorting wool, packing, offices, &c.

*Steam generators.*—Eighteen boilers, of which 8 for heating kettles for dyeing, 2 for washing wool and heating dryers, and 8 for steam-machines.

The consumption of coal is from 35 to 40 tons (Belgian) per day, at a cost of \$1.93 per ton, delivered.

#### MACHINES.

*Motive power.*—Three steam-machines give the motive power to these works—one vertical engine, constructed by Vanderkerchoven, of 800-horse power; one horizontal engine, constructed by the same, of 225-horse power; and one horizontal engine, system "Meyer," of 200-horse power; making a total of 1,225-horse power.

*Washing.*—Two batteries of "Leviathan" wool-washing machines, with four passages each, comprising dryers and compartments for greasing wool of the system "Mehl."

*Carding.*—Forty-two sets of simple and double carding machines, constructed by Schlumberger, F. J. Grün, Anglaise, and from the "Société Verviétoise."

*Combing.*—Forty-one combing machines, system "Heilman;" 21 system "Schlumberger & Co." (for merino wool); ten system "Meunier," maker F. J. Grün; and 7 system "Noble" (for ordinary wool).

*Merino wool-spinning.*—Three different preparatory machines, of eleven passages each, of which two were constructed by Koechlin, of Mülhouse, and one by F. J. Grün, of Gûbsweiler; 20,000 winding spindles, "self-acting," of which 5,000 spindles were constructed by F. J. Grün and 15,000 by Koechlin.

*Yarn spinning.*—Three kinds of preparatory machines, gill-boxes and bozettes, rowing frames and twist machines, and 6,000 spindles, constructed by I. Eastwood, Bradford.

*Weaving.*—One thousand and twenty mechanical looms of different width, according to the article to be manufactured, and varying in price from \$135 to \$289 each.

*Dyeing and finishing.*—A complete series of all necessary machinery for dyeing and finishing (latter "Dandy") all the tissues manufactured; also all machinery necessary to dye the wool used in spinning knitting yarn.

*Raw material.*—For the manufacture of cloth all kinds of wool are used; for knitting yarn, wool from Australia, England ("Southdown"), Wurtemberg, and Hessa.

*Hours of labor and wages.*—Twelve hours constitute a day's labor. No children under fourteen years are employed.

The following is a table of wages paid per week to the different classes of operatives. These prices have not changed during the past eleven years.

Operatives.	Highest.	Lowest.	Average.
Wool sorters (men).....	\$4 05		\$4 05
Wool combers (women).....	2 02	\$2 89	2 40
Wool spinners (men).....	8 10		8 10
Assistant spinners (men).....	3 47	4 05	3 76
Wool spinners (women).....	2 02	2 89	2 45
Wool spinners (boys).....	1 15	2 02	1 58
Weavers (men).....	4 62		4 62
Weavers (women).....	3 40	3 65	3 52
Dyers and finishers (men).....	2 94	4 62	3 78

*Importations.*—No duty is levied upon the importation of wool into Belgium.

*Taxes, &c.*—The insurance paid is \$4,246. The real-estate tax is \$694 per annum. There is also a tax of \$2.85 upon every \$100 of net profits.

*Production.*—In 1884 the quantity of cloth goods sold, of all descriptions, was 3,895,000 yards, value \$1,314,581; knitting yarn, 417,704 pounds, value \$226,920; the sale of waste from carding, spinning, and weaving, &c., \$107,623; making a total of \$1,649,124.

*Cost of unit.*—I have been unable to procure the data upon which to base any reliable statement of the cost of labor entering into the production of a "yard of cloth" or "pound of knitting yarn."

In a manufactory of such varied productions, with the raw material passing through so many hands before reaching its finished state, I am advised that it is practically impossible to fix the cost of such a "unit."

*Subsistence.*—I have not been able to obtain a reliable statement in detail of the subsistence of workmen in the establishment at "Loth."

From what I have been able, however, to gather, it will be safe to assume that, all other things being equal, the statement under the head of "Mines" will be found in the main correct for the employés at "Loth." The difference, if any, would be but trifling.

WILLIAM SLADE,  
Consul.

CONSULATE OF THE UNITED STATES,  
Brussels, November 6, 1885.

## AGRICULTURE IN ITALY.

### REPORT OF VICE-CONSUL TOUHAY.

The agricultural region surrounding the city of Turin may be said to be divided into two parts by the river Po, which rises in the Alps and pursues a tortuous course towards its outlet in the Adriatic Sea. The soil on the left bank of the river, extending towards the Alps, is largely constituted of sandy deposits, the detritus left by the streams resulting from the melting of the suows on the adjacent mountain tops. The general appearance of this part of the country is flat, somewhat resembling our western prairies, and it forms a portion of the great valley of the Po. The crops here are for the most part cereals, wheat and maize, but flax and millet are also raised, and some tracts are devoted to grass and hay.

Vegetables are only raised by the cultivators and farmers for their own consumption. The tract lying towards the west, in the direction of Carmagnuola, is considered fertile and yields good crops, but on the plain towards the east the quality of the land grows poorer and poorer, particularly in the region lying between the left bank of the Doria-Ripaira and Chivasso. Indeed, it may here be stated, as a general rule, that the entire soil of this country is exhausted from the constant cultivation of centuries, and unless a generous application of fertilizers be brought to bear the crops yielded are always poor and thin. In making mention of the fertility of the western portion, as above stated, it is necessary to explain that it is a mere question of comparison. By a free use of fertilizers the crops in the western district are pretty fair, whilst on the eastern side the harvest is poor and unsatisfactory under any circumstances.

## THE RIGHT BANK OF THE PO.

The country on the right bank of the Po is undulating, and forms in the direction of Monte Serrato a close and intricate labyrinth of hills, many of which are quite lofty and precipitous, but interspersed here and there with gentle slopes. The strata of these hills are marked by the characteristics of the medium Tertiary period, and many of them consist of deposits of a very fine argillaceous sand, which present all the indications of having served at some anterior period as the shore washed by an inland sea. The surface soil of this district is calcareous-argillaceous, and is the result of washings from the Apennines.

The predominating culture of this region is that of the vine. It is true that cereals are also raised, but only in very insignificant proportions. The annual yield of crops is good, especially in the important particular of the grape harvest. This yield would, however, be largely increased by a free use of fertilizers, which the exhausted nature of the soil imperatively requires.

## METHOD OF CULTIVATING THE SOIL.

The cultivation of land in the valley of the Po is conducted in two methods, namely, the tenant system and the direct farming of the soil by the landed proprietors. This latter is, however, only instanced in rare cases, as heretofore the land-owners have found it more convenient and profitable to lease their farms and receive their rents, without the trouble and risk of cultivating on their own account. Still, a change in this particular is rapidly taking place, for, owing to the agrarian crisis which for some years past has affected all property in Italy, and conspicuously in this district, the farmers have been placed under the necessity of either obtaining considerable reduction on their leases or of abandoning their farms. Indeed, of late the agricultural interests have been so badly crippled by poor crops, injury to the vines by destructive hail-storms, and ruinous competition from the United States in cereals that it frequently happened, in cases where the farmers were held to the letter of the law in the wording of their leases, they seized the first opportunity of gathering together everything they could lay their hands upon and decamping to the United States or South America, leaving the landlords with a certain loss of rents due and the prospective loss of the land lying idle for several months at least. All this is working a decided change in the tenure system, and landed proprietors are now beginning to cultivate their estates themselves. Still, it must be added that the old system of renting the land continues the rule in the large majority of cases.

On the right bank of the Po there prevails another system, and that is, farming on shares between the landlord and cultivator. The former gives the land, the latter works it at his own expense, and the crops are divided equally between them both. In the vineyards, however, a certain modification of this arrangement has been effected; for, as the price of wine for the past ten years has been maintained at quite a high figure, it has grown to be the custom for the proprietor of the land to receive two-thirds of the vintage, and the remaining third accrues as the share of the cultivator. This would seem to be a disproportionate bargain, for the landlord merely gives the soil, while the cultivator has to bear all the cost of the cultivation, has to furnish all the implements and cattle, and is obliged, moreover, to pay a small yearly sum for the grazing for said cattle. Still, all parties seem to be content with the

arrangement, for in this district it is very rare for the owners of the land to cultivate their vineyards themselves, and it is still rarer for cultivators to work the vines on leases.

#### FARMING IMPLEMENTS AND MACHINERY.

The employment of machinery in farming has not come into general use in the valley of the Po; still, as its advantages and economy are obvious, it has become of late years an important factor in the successful cultivation of the soil. The thrashing-machine has been adopted into more general use than any of the others. On the left bank of the Po, where the flat, prairie like character of the country permits the establishment of large farms, the steam thrashing-machine has obtained quite a foothold; indeed, many of the largest farms own their steam thrashing-machines. The great majority of the farmers, however, rent their machines from some one of the numerous agencies established in the country by English or German manufacturers. It is not unusual for a number of farmers to club together in hiring a machine for their harvest, taking their turn, one after the other, in its use, so that the thrashing of the grain generally begins about the latter end of June and is terminated towards the end of August.

In the hilly country on the right bank of the Po the cultivators were slower in adopting the use of machinery. At present, however, the thrashing-machine is rapidly superseding the antiquated system of flail-thrashing, and small machines of three or four horse-power are considerably used. These machines are rarely owned by the farmers, but are generally hired from some agency merely when needed for a special occasion.

In the beginning the cost of hiring these machines formed quite an item in the farmer's budget, as it amounted to some six or seven per cent. of the entire quantity of grain thrashed. This cost is now very much reduced and does not exceed four or at the outside five per cent. The hand thrashing-machine has been tried repeatedly, but its use has been abandoned, as it was found that the labor necessary for working it was so great as to render it quite impracticable. Still, it is even yet occasionally used on the very small mountain farms.

Three other machines have come into pretty general use, namely, the draught or fanning machine for cleansing wheat, the machine for shelling Indian corn, and the wine press.

This latter is almost universally adopted, and has, except in rare instances, completely superseded the old uncleanly system of treading out the grapes. The machine for seed-sewing has met with some small appreciation, but is not much used. The flax-crushing machine is, however, making considerable headway.

As for the reaping, raking, and mowing machines they are scarcely used at all, as the expense of maintaining them in order, to say nothing of their first cost, renders their employment impracticable. It is true the price of these machines is very much reduced of late, but the low rates of wages make it much cheaper for the cultivators to gather in their harvest by hand than to make the heavy investment of purchasing costly machines, difficult and expensive to maintain in proper working order. These considerations leave no argument in favor of large agricultural machines over hand labor, and the Piedmontese farmer finds that, in an economical sense, he would obtain no advantage in adopting their use. The reaping and mowing machines meet besides with almost insuperable difficulties in their practical use, for the reason that

this district is subject to the frequent visitations of violent wind storms, which come tearing down from the Alps and sweeping everything before them, consequently the grain stalks are tossed and bent in every direction, save in some few sheltered spots where the grain retains its upright position, so that the scythe of the reaping-machine would strike the wheat unevenly, at one time cutting away down, whilst the next moment it would either sweep clear of the bent grain, or merely shave off the ears themselves.

The implements used on farms of any considerable size are the plow and harrow, but the small cultivators work their narrow patches by the laborious use of the hoe and spade.

#### MANNER OF SOWING SEED.

For wheat, flax, millet, clover, grass, &c., the seed is freely scattered by hand. In planting Indian corn, a furrow is traced by the plow, the seed is cast by hand right in the line of the furrow, after which the blade of the plow is inserted along the seed line, and the soil lightly turned over so as to cover the freshly-sown corn. The bed is then smoothed over with rakes by field hands, who, for this work, are for the most part women.

#### REAPING AND MOWING.

In reaping, the Piedmontese farmer uses the sickle with an extremely short handle. The wheat is then bound up in sheaves by means of a few strands of straw. For mowing, the long-handled scythe is always used, and the cut grass is turned over, not with pitchforks, but simply with long poles, and when dried is gathered into heaps by means of wooden hand rakes.

#### LABOR CONTRACTS, WAGES, ETC.

Leaving aside the hill country, where, as before stated, the system of share-farming prevails between owner of the soil and the cultivator, we find that on the plain the custom of hiring help for the working of the land is so general as to be almost universal. Where farms are rented the tenants are principally peasants, who turn to with their individual labor, but even they frequently are obliged to employ help. The average rate of wages paid in cash to field hands ranges from 100 to 120 francs per annum. They receive in addition from three to four sacks of grain, first quality, measuring in all from 3.45 to 4.60 hectoliters; three sacks of grain, second quality, measuring in all 3.45 hectoliters; and five sacks of Indian corn, amounting to 5.75 hectoliters.

The laborers generally hire out in families of two or three or four persons, and each family is further paid from twenty to forty kilograms of flax, from forty to fifty kilograms of oil for burning, and is allowed the use of a patch of ground for the raising of vegetables and three or four *perche*\* for growing beans, potatoes, &c. Each paid laborer is also granted the use of a field measuring a *mezza giornata*† for the fall planting of Indian corn, which is destined exclusively to cattle feed,

\* *Perche* is a Piedmontese peasant measure of land. It is literally the furrow of a plow.

† The *giornata* is a Piedmontese land measure equal to 3,500 square meters. The term *giornata* signifies "day's labor," and as a measure means the extent that might be cultivated in one day by an able-bodied laborer. *Mezza giornata* means half a *giornata*.

and finally they are sometimes allowed to keep a pig and a small quantity of poultry on the land. All these allowances "in kind" represent an annual cash value of from 40 to 60 francs to each paid laborer. It must be remembered that the term "paid laborer" is applied to the permanent employés on a farm, engaged by the year.

It sometimes happens that special contracts are made between the farmer and laborer, by which the latter contracts for the performance of all the work on the land, starting with the spring weeding, and continuing right through until the harvest is gathered into its final bousing. These contracts are undertaken by the heads of families who press their wives and children into service, and, when that does not suffice, hire laborers at their own expense for the completion of their contract. This is virtually a modification of the share system, as the labor contractor receives for his compensation one sixth of the entire crop. The labor contractor has to stipulate in his agreement that he will furnish so many hands, and if the members of his own family happen from any cause to fall short of the number engaged by him for the performance of his contract, he must then employ outside help to fill up the vacancy; but such outside help are bound directly to him, not to the farmer, and are rated as his servants. Each servant or hired laborer in this arrangement is paid from 100 to 150 francs per annum in addition to his board and lodging.

#### WORK AND DUTIES OF FARM LABORERS.

All persons who are hired and paid by the year have their special avocations. Their work is always carried on with the aid of stock, and each laborer has a yoke of oxen for plowing, manuring, and irrigating the soil. For the harvest the farmers employ day laborers recruited from the numerous families of small land-owners, whose patches, located on the hills to the right of the river Po, and even away up on the Alps, are so small as to leave them considerable leisure for outside work.

These laborers, both men and women, leave their mountain homes at harvest time in considerable numbers and hire out in bands for the work of harvesting. Each band elects a head man or chief, and this latter stipulates the number of hands to be furnished and the wages to be paid to them. In forming a band of laborers for hay-cutting, they calculate the average as being one able-bodied man to about three hectares of meadow. These men confine their work to mowing. For turning the cut grass and drying it the farmers employ female labor from among the wives and daughters of the mountain laborers, and each of these women is paid from 18 to 25 cents a day; they are also given a daily *minestra*, a dish of vegetable soup, made with a little oil to take the place of meat. The regular farm hands employed by the year carry the hay to the barn-yards and stack it.

The cost of this haying averages 5 francs per *giornata*, or 13.15 francs per hectare of 10,000 square meters.

In gathering in the grain harvest the same mode of proceeding as that just described is observed. The foreman, or chief of a band of laborers, contracts for reaping, binding, and thrashing of the crop, as also for storing the grain in the barns and building the straw ricks, but the permanent farm hands transport the grain from the fields to the thrashing ground. The laborers' pay for this harvest work is always in kind, and as a rule amounts to about one-sixth of the crop.

Before the introduction of the steam thrashing-machine the laborers did all the harvesting; that is to say, they did all the reaping, binding, and thrashing of the grain, providing horses at their own expense when necessary for the operations, stacked the corn and stored the grain in the barns after subjecting it to two fannings for separating it from the chaff—the first fanning done at the close of each day's work, the second when the entire crop was gathered in, so as to thoroughly cleanse and purify the grain, after which they concluded their operations by storing the crop in the barns.

The introduction of the steam thrashing-machine has considerably modified this arrangement, and now the laborers receive in kind one-twelfth part of the crop in payment for all the harvesting, the farmer only paying for the hire of the steam thrashing-machine, and, if necessary, for such additional help as may be required. The laborers may also, at their option, contract for the entire harvesting, assuming the expense of supplying extra hands when necessary, as well as the hire of the steam thrashing-machine, and are compensated by receiving one-sixth of the crop.

In gathering in the Indian corn the same arrangement is observed. The laborers, through their foreman, contract for the entire job of gathering, drying, shelling, and storing the corn into the barn, as also, for the cutting and binding of the stalks, and receive for their pay 7 per cent. of the crop.

For the flax crop they start in their work with the weeding in the spring, and after they accomplish the final cutting and maceration of the flax, are paid one sixth part of the product.

The minimum of wages for a day laborer is 1 franc a day for men and 70 centimes or about 14 cents for women. This is only the case in winter, for in summer men are paid 3 francs per diem and women 1 franc 50 centimes.

The cowboys tend the stock on the farm, are hired by the year, and in addition to their board and lodging are paid an annual stipend of 50 francs.

#### FOOD OF THE PIEDMONTESE PEASANT.

The staple food of the Piedmontese peasant consists of wheat bread and *polenta*, a mush of corn-meal. Formerly, as a measure of economy, the country people used to work into their bread a certain proportion of inferior flour, but there has been effected a decided progress in this particular, and at present the bread is made of unadulterated wheat flour. Each household makes its own bread, as almost all the farmers build their own ovens, but if there should happen to be no oven, they go to the public bakery, where for a few centimes they can get their bread baked.

In summer the peasant takes his first meal about 8 o'clock a. m., just pausing for a few moments in his field labor to eat a hunk of dry bread. About 11 o'clock he returns to the house, where a dish of *polenta* or some poor mess of vegetable awaits him. In the evening there is again a dish of cornmeal or of bean soup, and perhaps the addition of rice or coarse macaroni. In summer there is, in addition to the foregoing, a lunch about 3 or 4 o'clock in the afternoon, and at this meal there is an enormous consumption of onions, garlic, melons, lettuce, green peppers, and so forth, which are dressed with oil by the more prosperous ones, but only with a pinch of salt by the less favored companions.

Such is the ordinary fare of the peasant, the only difference being when on some high feast day he may have a couple of sausages to eat



with his corn mush. Meat is an article of luxury almost unknown, and is only indulged in on the recurrence of the festival of his patron saint, when there is a family gathering. It is true that now and then a cow or a calf may die a natural death, and if such a death is not produced by an absolutely contagious disease, the meat is sold very cheap and that day there is feasting and rejoicing in the village.

In the hill country, amid the vineyards, the peasants nearly all drink wine. In winter they drink *acquetta*, a beverage made by steeping the grape skins taken from the press after the wine has been made; but in summer they drink the pure good wine, diluted, it is true, with water. The farm hands, with their help on the plain, rarely drink wine. Sometimes, on holidays, the most extravagant among them visit the wayside inn and have quite a time over their measures of poor thin wine, or then again, the farmer may regale them with a few bottles on occasions after some great pressure of work; but, as a rule, wine is a luxury very rarely tasted by them. There is a striking difference of appearance between this class of men and denizens of the hill country. The former are pale and sallow and easily give way before fatigue, while the latter—the wine-drinkers—are ruddy, prosperous looking, and very strong and robust.

#### CLOTHING.

Throughout the valley of the Po, as well as in the hill country, the peasants wear clothing of heavy cotton stuff when working in the fields; their holiday dress is generally of wool, or of wool mixed with silk refuse, and the young men on festive occasions wear jackets of cotton velvet with soft felt hats. Their head covering for working days is either a straw hat in summer or a woollen cap in winter. The women wear coarse cotton throughout the week, and on Sundays and holidays they array themselves either in percales or woollen, and the married women, if possible, deny themselves in every particular to secure the *summum bonum* of their ambition, a silk gown. All the women wear *dorini* necklaces of four or five rows of hollow beads of either gold, silver, or gilded metal, according to their means, and their head-dress, the *pezzuola*, is a square piece of muslin or tulle embroidered more or less elaborately on the edges. In some villages on the plain this head-dress consists of a kerchief of some bright colored or printed calico. For ordinary wear, the sabot, or wooden shoe, is the rule for both sexes, and stockings are only worn on feast days, when the sabot is discarded for coarse hobnailed shoes.

The annual cost of a peasant's clothing, comprising a felt hat, jacket, waistcoat, two pairs of trousers, a heavy knit woollen shirt for winter wear, three shirts, a pair of shoes, and a pair of sabots is calculated to amount to 56 francs, or a little over \$11. That of a woman or girl may be set down as costing about 40 francs, and a bride's outfit, including everything, is purchased for a sum running from 150 to 180 francs.

#### DWELLINGS OF THE PEASANTS.

In writing of the peasants' food, it has been shown how deplorably lacking it is in the requisites of nutrition and quality; but the peasant dwelling is not fit for human beings to live in. The houses are, as a rule, built simply of stones piled up loosely, with just enough of coarse mortar to keep them from tumbling down, and even when the construction is a little better they are dilapidated, full of draughts, and frightfully cold. The division of the chambers consists of a kitchen on the

ground floor, where the family eat, and not unfrequently some of the members sleep as well. The winter provisions are kept on the floor above, and here the married members of the family sleep, their beds consisting of coarse sacks stuffed with dried leaves, and laid on rough poplar planks. Some of the more prosperous indulge in the luxury of a woollen mattress, but these latter are not numerous. The windows of the dwellings are seldom or never glazed, the only defense used against the outside cold being a sheet of paper pasted over the rickety frame. These upper rooms are further utilized in the spring for the keeping of the silk-worms.

This is literally all that can be said about the dwelling of the Piedmontese peasant farmer. There may be here and there some little less discomfort in their household arrangements, but as a rule the above description is exact, and shows the more than Spartan simplicity and hardships, as we should consider it, of their daily lives.

#### PRESENT CONDITION OF WHEAT GROWING.

In concluding this report I adjoin a few figures to show the desperate condition to which the grain-growers in this district are reduced by taxes, high rents, and above all by competition from the United States. The agrarian question in Italy is growing to be a great national problem, and as for the last five or six years the cultivation of the soil has been conducted always without profit, and just now at a dead loss, the mutterings and discontent in the rural districts are growing alarming. The Italian peasant is hopelessly ignorant, and although he possesses the right of being represented in Parliament, and insisting upon some legitimate measure of relief, such as the reduction of the heavy taxation under which he specially labors, he cannot extend his vision beyond his field, and his wrath is particularly directed against the landed proprietors who are seemingly better off than himself, but who in reality have to share the same burdens. It is the old specter of socialism, and unless a remedy be found, and that quickly, there is a strong likelihood of trouble, not only in Piedmont, but all over this Kingdom.

#### *Cost of the production of grain per hectare of 10,000 square meters.*

	Lire.
Plowing, sowing, spring weeding, reaping, thrashing, and storing .....	95 00
Manuring .....	190 00
Seed .....	30 00
Interest on capital invested and taxes, the latter calculated at 40 francs to the hectare .....	145 00
Cost of administration and other expenses .....	32 00
	<hr/>
	Lire 492 00
	Or \$94 95

#### *Result of harvest at current prices.*

	Lire.
Average yield of wheat per hectare, 14 hectoliters, at 7 lire .....	238 00
Average yield of straw per hectare, 40 quintals, at 5.50 lire .....	220 00
	<hr/>
	Lire 458 00
	Or \$88 40

#### *Cost of production of Indian corn per hectare.*

	Lire.
Laborers' wages and keep of oxen .....	160 00
Manuring .....	260 00
Seed .....	39 00
Interest on capital invested and taxes .....	145 00
Cost of administration, &c .....	32 00
	<hr/>
Total .....	Lire 636 00
	Or \$122 75

*Result of Indian-corn crop at current prices.*

	Lire.
Average yield of corn per hectare, 30 hectoliters, at 11.50 lire .....	345 00
Average yield in stalks and cobs p. r hectare .....	100 00
Total .....	Lire 445 00
	Or \$85 88

*Cost of cultivating meadow land per hectare.*

	Lire.
Laborers' wages and keep of oxen .....	180 00
Manuring .....	300 00
Interest on capital invested and taxes .....	145 00
General expenses .....	32 00
Total .....	Lire 657 00
	Or \$126 80

*Result of grass crop at current prices.*

Product of three yearly cuttings per hectare, 107 quintals, at £6 per quintal .....	Lire 642 00
	Or \$123 90

Thus showing a dead loss to the farmer, on each hectare, at the present prices, of \$6.55 on his wheat, \$36.87 on Indian corn, \$2.10 on hay.

ST. L. A. TOUHAY,

UNITED STATES CONSULATE,  
Turin, November 25, 1885.

Vice Consul.

## RELATIVE COST OF AMERICAN WOOLS AND CORRESPONDING GRADES OF FOREIGN WOOLS USED IN GREAT BRITAIN.

### REPORT OF CONSUL SCHOENHOF, OF TUNSTALL.

The importance of establishing the relative cost of American wools and foreign wools used in Great Britain and other countries as they stand, both in the grease and in the manufactured wool article in America and abroad, where wools are free from import duties, has induced me to obtain samples of American wools, principally used in home manufactures, and subject them to the test of comparison. I deemed the price period especially favorable for such comparison, as under the rule of lowest wool prices in America the price difference between American wools and foreign wools is still so pronounced that no other illustration is needed to show the heavy burden upon American manufacturers than the relative tables of values. The prices are those ruling in April of this year, before the June rise in prices had taken place both here and in America. The samples which I received from America were sent to me in small quantities, and I could not therefore make the analysis on a larger basis than the one undertaken. I very carefully weighed off two ounces from each parcel, which were varying in weight from a little over two up to four ounces. I forwarded them to Mr. I. L. Bowes, of I. L. Bowes & Brother, of Liverpool, with a request to have them analyzed by an expert and have samples of wools found used in British manufactures of like character; have them analyzed likewise and note the shrinkage, &c., to me.

Under date of June 23 and July 15 I received the following :

DEAR SIR: I have now the pleasure of writing to you on the subject of the samples of American wool which you requested me to have scoured for you. The samples were as follows:

No. 1, Ohio XX washed.

No. 2, five-year growth, Texas.

- No. 3, fall shearing, Texas.  
 No. 4, fall shearing, Colorado medium.  
 No. 5, spring shearing, Californian.  
 No. 6, fall shearing, Colorado coarse.

In accordance with your request I have selected from wools grown outside of the United States of America varieties which correspond with your six samples. They are as follows:

- No. 7 against No. 1, superior unwashed New Zealand fleece.  
 No. 8 against No. 2, average unwashed New Zealand fleece.  
 No. 9 against No. 3, ordinary unwashed New Zealand fleece.  
 No. 10 against No. 4, ordinary unwashed Cape of Good Hope.  
 No. 11 against No. 5, unwashed Montevideo wool.  
 No. 12 against No. 6, unwashed Georgian autumn.

All these six kinds of wool are articles of regular importation into the United States and are taken into direct competition with the wools grown in that country.

Your own samples weighed 2 ounces each. After making the six substitutes precisely the same weight I sent the whole twelve samples to Yorkshire and had them scoured by an expert, with the result as given on the next page; this result is given in grains, 437.5 of which make an ounce.

I return you the whole of the scoured samples, and, for your information, I send duplicates of Nos. 7 to 12 in their original condition.

I shall be glad to furnish you with any further information on the subject, and I must apologize for my delay in answering these questions; but now that the holidays are over you may rely upon a more speedy answer to any questions you may put.

Yours, faithfully,

JAMES L. BOWES.

#### Result.

Number.	Second weight.	Number.	Second weight.	Number.	Second weight.
	<i>Grains.</i>		<i>Grains.</i>		<i>Grains.</i>
1 .....	437. 1	5 .....	265. 3	9 .....	445. 6
2 .....	384. 9	6 .....	681. 6	10 .....	373. 5
3 .....	279. 7	7 .....	536. 6	11 .....	470. 8
4 .....	368. 4	8 .....	397. 7	12 .....	728. 4

Now the relative prices in the grease are as follows: April prices, American prices from wool brokers, and foreign prices from Messrs. J. L. Bowes & Bro.

*Prices of American wools in the grease and of foreign wools in the grease in England and New York with duty and expenses added.*

[Nos. 6 and 12 are carpet wools.]

Number of American wools.	Price per pound in grease in New York.	Number of corresponding foreign wools.	Price per pound in grease in England.	Price per pound duty paid, &c., in New York.	American grease wool over foreign wool in England.	Foreign grease wool in America over foreign grease wool in England.
	<i>Cents.</i>		<i>Cents.</i>	<i>Cents.</i>	<i>Per cent.</i>	<i>Per cent.</i>
1 .....	38	7	22	34	50	55
2 .....	23½	8	15	27	56.6	80
3 .....	21	9	13	25	61.5	92.8
4 .....	20½	10	10	21½	105	115
5 .....	21½	11	13	24½	65.5	89
6 .....	14½	12	11½	16	23.5	28

Now, in scouring these wools would lose from the grease wool of 875 grains, according to the data given above, and would stand as follows in relative prices when scoured:

*Percentage of loss and increase of relative prices of scoured wool to grease wool, both here and in America.*

Number of American wool	Loss in grains.	Loss per cent.	Grease price.	Scoured price.	Number of foreign wool	Loss in grains.	Loss per cent.	Grease price in England.	Scoured price in England.	Scoured price in New York.	Difference between scoured American and foreign wool.	Difference in foreign wool both in America and in England.	Percentage of American wool over foreign wool in England.	Percentage of foreign wool in America over foreign wool in England.
1.....	447.9	51.12	Ots. 33	67.5	7...	338.4	38.67	Ots. 22	35.9	55	+	19	88	53
2.....	540.1	61.71	28½	61.4	8...	477.3	54.57	15	33	59.4	28.4	25.6	86	78
3.....	565.3	68	21	65.6	9...	429.4	44.05	13	23.4	45	42.2	21.6	180	92
4.....	406.6	58	20½	48.8	10...	501.5	57.31	10	23.5	50.3	23.3	26.8	107	114
5.....	609.7	69.70	21½	70.7	11...	404.7	47.39	13	24.7	46.5	45	21.8	182	88
6.....	243.5	27.81	14½	20	12...	146.6	16.74	11½	14	18.7	1.3	4.7	9.3	33.5

*Recapitulation of scoured wool, prices of corresponding qualities, American and foreign-grown, in America and England.*

American—	Foreign-grown.	Price in England of scoured foreign wool.	Price in America of scoured foreign wool.	Price in America of scoured American wool.
No. 1.....	No.	Cents.	Cents.	Cents.
2.....	7	35.9	35	67.5
3.....	8	33	59.4	61.4
4.....	9	23.4	45	65.6
5.....	10	23.5	50.3	48.8
6.....	11	24.7	46.5	70.7
	12	14	18.7	20

The discrepancy between the prices of scoured wools and grease wools is very glaring. But then it is well known that it can never be said what wool is until after it is thoroughly scoured. The loss in our wools, in the samples submitted, is much greater than in the foreign samples selected and comparing in quality with them. The very cheapness in foreign wools makes the difference all the more apparent. The wools are all imported now in the grease, as it is said the same acts as a kind of preserver of the fiber, keeping it soft and pliable, while formerly, when more scoured wools were imported, it was found that they would lose in quality on storage; besides that, home scouring is yielding more satisfactory results otherwise. All this grease and dirt, however, washed out in scouring, not alone has to pay duty of 10 cents a pound, for each pound so removed as useless, but also freight for extra carriage when transported from Liverpool or London to New York. On wools grown in America the difference in price between the cost to the British manufacturer and the American manufacturer falls not the less heavily upon the latter, because no duty is paid to the Government thereon. In the competitive struggle for the markets the 100 and 180 per cent. additional cost, over that the foreign competitor has on clean wools, does not count less to the manufacturers because the difference goes to the support of some other home industry.

It must, however, be borne in mind that the scouring does not at all cover all the loss and difference in price. It is known that in manufacturing scoured wool into all-wool goods a loss of about 20 per cent. is sustained, so that a pound of pure woollen manufacture would require 1.25 pounds of scoured wool. Adding this 25 per cent., or, to be within a very close mark, 20 per cent., to the cost, the difference would be much greater, and would stand as follows:

*Cost of manufactured wool in America and foreign-grown in America and in England.*

Sample number of American.	Sample number of foreign-grown.	Price in England of a pound of manufactured foreign-grown wool.	Price in America of a pound of manufactured foreign-grown wool.	Price in America of a pound of manufactured American wool.
1	7	44.8	66.0	81.0
2	8	39.6	71.3	73.7
3	9	28.1	54.0	78.7
4	10	28.2	60.3	58.5
5	11	29.6	54.8	84.8
6	12	16.8	22.4	24.0

I inclose herewith both the foreign and American wool samples enumerated in this description, and of the original wool samples from which the scoured lots were taken, so that the test can be repeated, or other expert comparisons made in America if desirable.

It will be seen on examination that, if anything, foreign wools represented by samples 8, 9, and 10 are finer and longer stapled than 2, 3, and 4 of home growth. Our manufacturers seem to begin to appreciate these facts, as the much heavier importations of clothing wools attest.

J. SCHOENHOF,

UNITED STATES CONSULATE,

*Tunstall, August 19, 1886.*

*Consul.*

## MINE-DRAINAGE MACHINERY AND ITS APPLICATION.

*REPORT OF CONSUL WIGFALL, OF LEEDS.*

A most important enterprise, connected with the great coal and iron mining district of South Staffordshire, having recently entered upon what promises to be its final and successful stage, a fit occasion seems presented for calling attention to the undertaking itself, and to the essential share in carrying it out, contributed by a firm of Leeds engineers.

The district in question, a small map of which accompanies a sketch of the operations there (to appear later on), lies in the midland region of England, and comprises the southern part of the county of Stafford, with the contiguous territory extending in easterly and westerly directions from the neighborhood of Wolverhampton to near Birmingham. It may be mentioned incidentally that it was this immediate vicinity which witnessed some of the earliest efforts of Watt (by his firm of Boulton & Watt, whose works were established near Birmingham), and that the same problem which now seems approaching a solution, viz, the relieving of these mines from the pressure of the accumulating water, formed largely the stimulus under which that great mechanical genius wrought in accomplishing the success which has handed down his name as the practical inventor of the steam engine.

The South Staffordshire is one of those favored regions which has apparently been marked out by nature for the manufacture of iron.

Here iron, coal, and limestone lie side by side in almost limitless supply. This very proximity, indeed, in the course of prolonged working, has in some measure come to militate against the further progress of the mines. In the extensive explorations which the operations have entailed the surface of the earth has been so broken up that together with the faults of stratification the ground is thoroughly honeycombed. For a period of many years some of the mines have been abandoned, while those which continued their output have done so at an outlay for pumping which has gone far towards destroying the profits of the operators.

With such a condition of the locality, accompanying coterminous occupation and working, it may readily be perceived what a field was open for misunderstanding, continuous disputes, and ever-recurring litigation among the various mine-owners. This became at length so disastrous that steps were taken to secure the authority of Parliament in order to apply a remedy.

An act was passed in 1873 supplementing earlier legislation, and itself in turn supplemented by later acts in 1878 and 1881, by which a commission was organized having plenary authority to take over the various pumping plants, to consolidate the whole drainage system of the district, and to levy a rate in the nature of a tax upon each mine, and thus derive the means by which an effectual plan might be operated for the benefit of the entire district.\* This is the first instance perhaps in the history of mining in which on so large a scale such an experiment has been so satisfactorily made.

#### SURFACE AND UNDERGROUND OPERATIONS.

The undertaking seems to have fallen naturally under two heads—surface operations and those underground. The first surface work presumably contemplated cutting off as completely as possible percolation from above by strengthening the banks of water courses, whether natural or artificial, and combining therewith arrangements for controlling and conducting away with the least delay any adomitious accumulation from the regular rainfall. The second or underground operations would in like manner look to tapping subterranean reservoirs, disused workings, &c., and concentrating the water therefrom in a manner to render it most easily manageable.

#### SURFACE DRAINAGE.

It is understood that these two branches of the work have accordingly been allotted by the commissioners to separate organizations of their body. It has been found generally feasible to deal with the surface water by means of natural flow, directing it into and carrying it away through the already existing channels. For this purpose alone the advantage of having the entire district under a single control is too obvious to be enlarged upon. The benefit is perhaps even greater when the underground workings come to be considered. So great, indeed, has been the economy secured by this method that it is believed to be eventually possible by means of six pumping stations to accomplish the work which previously required no less than seventy engines. The saving in money outlay is represented to be something like the difference between £7,000 and £70,000 per annum. The new plan moreover succeeds while the old one failed. The annexed sketch, taken from the Colliery Manager of May 15, 1885, gives a somewhat detailed view of

\* 36 and 37 Vict., ch. cl; 41 and 42 Vict., ch. lxxi; 45 and 46 Vict., ch. cxxxi.

the subject, and is accompanied, as will be seen, by a map of the district and by an illustration of the large pumping engine which has now begun work.

*The drainage of the South Staffordshire coal field.*

The great quantity of water found in the mines of South Staffordshire had often led to the suspicion that the pumped water found its way back into the mines, owing to the great injury to the surface caused by taking out such thick seams as the famous ten-yard coal.

It was not until the meeting of the British Association in Birmingham in the year 1865 that any attempt was made to ascertain the total quantity pumped, or to trace its destination.

Without some such information it was impossible that any adequate steps could be taken to grapple with the increasing "come" of water in the mines. This valuable service was rendered to the district by Mr. E. B. Martin, C.E. then in private practice as a civil engineer, and who since the passage of the South Staffordshire mines drainage act has been chief engineer to the drainage commissioners. The substance of the information collected on this subject was communicated by Mr. Martin to the Dudley and Midland Geological and Scientific Society in November, 1865, and from this communication the following particulars are derived:

Undoubtedly the greatest difficulty has always been the want of that combined effort necessary among the various owners of surface and mines affected, and the need of some ready means of adjusting the charge in proportion as each proprietor was benefited.

In too many cases the whole burden has fallen on a few who could not bring their mineral wealth to bear without submitting to it.

There has also been trouble as to maintaining the water-courses upon the property of others, so as to carry the water away and secure it from returning to be repumped; but in this particular the canal companies, with their parliamentary powers and direct interest in keeping their canals water-tight, gave opportune assistance. Had this not been so the proprietors of mines would have to construct and maintain at very great cost some such aqueducts to get rid of the water from their engines, as their own mining operations soon destroyed the natural brooks and streams as sufficient outlets.

The engineering and mechanical difficulties have been also numerous.

In most cases the quantity of water to be raised was only matter of vague estimate, or a large "pound" had to be pumped out before the regular "come" was ascertained, so that much larger engines had to be erected than were afterwards found necessary.

Perhaps some of the most serious difficulties have been met with in pumping from mines that have been worked before and allowed to be "drowned," as the pound-room has been so much increased that the task has at times seemed almost hopeless.

Sometimes unexpected difficulties have attended these operations—such as the extremely corrosive nature of the water that has long remained in old workings, which has caused such rapid decay of the iron of the pumps and rods that in some cases the working barrels needed to be constructed of brass at greatly increased cost.

The engines used were of the most varied description, and performed very unequal duty in proportion to the feed consumed. Full particulars of them would illustrate almost all known ways of applying steam power to pumping, and the engines of this district would compare well with most other coal fields, as the cost of raising each ton of water is about the same here as elsewhere.

Through the courtesy and assistance of the various proprietors, particulars were obtained of nearly all the engines in the district, from which it was ascertained that the quantity of water raised by pumps or barrels from the mines of South Staffordshire was on an average of about fifty million gallons per day of 24 hours.

The weight of this daily quantity of water would be about 220,000 tons, or nearly ten times the weight of the coal raised in the same time.

This was effected by means of 164 engines, representing about 5,000 horse-power, or a capital of about half a million pounds, and involving an annual expenditure, including interest of capital, of £125,000, or about 3½d. per ton of coal raised in the district.

As these are "big figures," it may be well to state the quantity of water raised per day in other terms, so as to better realize the very great bulk of this daily 50,000,000 gallons of water.

It equals 8,000,000 cubic feet.

It would fill 2,000 canal locks.

It would fill an ordinary canal 12 miles long.

It would cover 18 acres of land 10 feet deep.

It would fill Birmingham Town Hall brimful 14 times, and



It equals nearly half the daily rainfall, and would make a river as large as the Tame.

The drainage area of the coal fields is about 125 square miles, and as it is situated on some of the highest table land in England, little or no water is brought on to its surface by any natural stream or artificial means, except the comparatively small quantity distributed by the water companies, who derive their source of supply from a distance.

The coal field is naturally divided into two distinct portions by the ridge of hills stretching from Rowley through Dudley to Sedgley and Wolverhampton. See map.

Before the surface was disturbed by mining, the area on the south side of this ridge, containing Halesowen, Lye, Cradely, Brierley Hill, Netherton, and Gornal, was chiefly drained by the Stour and its tributaries.

The area on the north side of this ridge, containing Oldbury, Tipton, Bilston, Darlaston, Willenhall, Wednesfield, Walsall, and Wednesbury, was drained by the Tame and its tributaries.

The area on the extreme north of the coal field, containing Church Bridge, Norton, Cannock Chase, Hednesford, and Brereton, was drained by the Saredon, Bentley, Bilston, How, and Crane brooks.

It is difficult to say how far these drainage areas have been altered, for the canals alone have absorbed the flow from 25 miles, and the cuttings and embankments of railways must have modified many other areas; but it may be estimated that, notwithstanding all this water brought to the surface by pumping, the streams flowing off the district are not larger than they were before the mining was commenced.

This may be accounted for on the theory that, the only source of supply being the rainfall, the amount that penetrates the surface falls down to a lower level than formerly, and is lifted again to make it flow off the surface, but that it thus only makes a larger circuit, but does not increase in quantity.

The amount of rainfall in South Staffordshire is less than in many places nearer the coast, and has not averaged, for eighteen months, more than 22 inches per annum. At this rate, the whole quantity falling in the 125 miles of the coal field would not exceed 108,000,000 gallons per day of twenty-four hours, and if to this is added about 4,000,000 of gallons for the water delivered by the water companies, it brings the total amount that has to be accounted for as coming into the district to 112,000,000 gallons per day.

The streams flowing off the district are estimated to discharge, on the average, about 52,000,000 gallons, which, together with about 13,000,000 gallons diverted into canals, would amount to 65,000,000 gallons, leaving only 47,000,000 million gallons for evaporation and percolation, which is less than the latter alone, as proved by the quantity pumped (50,000,000), and leads to the conjecture that the great quantity of water found in the mines is due to something else besides the rainfall.

It was ascertained that of the 50,000,000 gallons pumped, about 37,000,000 flowed into the canals and the remaining 13,000,000 into the natural water-channels. The canals, therefore, receive the great bulk of what is pumped, as well as the surface flow from a portion of the drainage area, as before mentioned. No reliable information had been obtained as to how this quantity was disposed of, as it would require returns of the lockage from all the outlets where the water really passed off, without being pumped back again to the upper side of the locks. Due allowance would have to be made for the evaporation from the large water surface, and for what was used for the working of most of the engines in the district, for which the canal forms the source of supply, and also the quantities abstracted for other purposes at works along the banks. If it is taken for granted that all the water which found its way into the canals was kept there or carried off the district, it increases the difficulty of accounting for the quantity of water found in the mines; because then the quantity pumped would soon empty the mines altogether.

The foregoing figures were necessarily somewhat conjectural, but sufficiently reliable to show very plainly that the great quantity of water found in the mines could only be accounted for by supposing that very much of that raised found its way back to be repumped. The whole surface of the coal field is more or less perforated by pits, or dislocated by mining operations, or divided into catch-water pits by the deposit of spoil banks, in which the water had to accumulate to considerable depth before it could run off, as the water courses had to be maintained at the old level, although the surrounding ground is depressed. In many places awags may be found filled with water which had no means of escape except by percolation through the bottom.

Formerly the mines were here so rich in mineral, and the "slack" made in getting the coal was so plentiful before the demand arose from the working of engines for other industrial operations, that the cost of pumping was not, perhaps, felt burdensome, but each year the quantity of water to be raised has increased until, in 1865, there were more engines at work than ever, and the 3½d. per ton formed an appreciable addition to the cost of the minerals. It should be remembered that this 3½d. must be considered as an addition to the royalty, and as such would form a large percentage on the average royalty paid throughout the district.

There was no question that, if the pumping from the mines could be conducted on one complete system, very much of both capital and annual expenditure would be saved, and the cost per ton reduced to something like one penny.

A glance at a map constructed to show the pools, locally called "swags," caused by the widening out of streams from the sinking of the mined ground, was enough to give convincing proof of the probability of surface water escaping to the mines; and the fact that the 100 miles of canals and basins in the district had needed continual raising, sometimes as much as 30 feet, to maintain the proper water-level, increased the chances of escape of water into the mines.

The subject naturally divided itself into the twofold needs of "mending the surface" and "economic pumping."

The commission constituted by the act of 1873 and the amended acts of 1878 and 1882 dealt with it on those lines. For surface-mending the whole area of 80 square miles was dealt with as one, and all the surface streams, amounting in the aggregate to 500 miles, have been more or less mended, and many of the larger streams have had entirely new water-tight beds made throughout, so that the "come" of water in the mines has been reduced to less than one-half, and in some places to less than one-third of that previously existing. Also by a system of surface-pumps and catch-drains for lifting the water from areas sunk by mining below the outlets on a tract of land of over 10 square miles, otherwise only draining into the mines, has been more or less cured.

These surface works have been laid out on a complete system to allow the greatest fall possible consistent with effective velocity and sufficient width to carry off the storm water, which, of course, now goes down in much shorter time after heavy rain, in consequence of the improvements of the upper parts of the stream.

The underground case has been dealt with by division into several districts. The districts were Bentley, Bilston, Tipton, Oldbury, Kingwinford, and Old Hill. The arbitrators postponed any action in Bentley. Bilston and Tipton were united together. Oldbury excluded itself from action underground, and the injustice continues that pumping is done by a few without aid from the others benefited. Kingwinford also similarly excluded itself with like injustice to some of those who have done the bulk of the pumping. The system initiated in Old Hill before the act was completed, and is in successful operation, nearly all the water being pumped by a very few engines.

The draining of the Bilston and Tipton districts, now united into one, has always presented peculiar difficulties. Before the act was passed there had been 110 pumping engines, 43 of which had stopped, and complete inundation of the mines seem imminent.

The arbitrators under the act gathered information for reports as to what should be done in each district, the main object being to concentrate the water to the lowest point in each underground "pound," but they pointed out that the case would be much easier to deal with after the surface works were completed.

From various urgent requests to assist those who are pumping to prevent the drowning-out of the mines, and the consequent increased difficulty of dealing with the work in the future, some engines were acquired, and others were worked by the commissioners with only partial success in mastering the underground water, and at a cost exceeding the produce of the rates.

About two years ago the commissioners delegated the direction of affairs to a very strong "committee of three," who determined to fully grapple with the engineering problem, and to put down one or two good and large plants, and to bring the water to them by underground levels, and so dispense with the other and less efficient engines, thereby reducing the number of establishments only half-worked, and bringing the annual expenditure within the income, from rates of even the present bad times. There were in 1884 21 engines at work in Bilston and Tipton districts; for 1885 they are reduced to 13, and eventually to 7, or perhaps less.

Our double-page illustration shows in fig. 1 the general elevation of the engine and pumps at Bradley, which is the largest pumping engine put down for the commissioners, and probably the largest pumping engine ever erected for the purpose of mine drainage. The high pressure cylinder is 52 inches in diameter, the low pressure 90 inches in diameter, the stroke 10 feet. The diameter of the ram pumps is 27 inches, and that of the bucket pumps 27½ inches. Fig. 2 shows the general plan; fig. 3, a cross-section of the shaft at the level of the ram pumps; and fig. 4, a plan of the same.

The first engine dealt with thoroughly was one of those at Stow Heath, to which differential gear was attached, and the whole plant was so improved that one engine now lifts nearly 3,000,000 gallons per day, or something like as much as the two engines used latterly to do. The large engine, now nearing completion at Bradley, was next ordered, by which 4,000,000 gallons per day will be raised; and also the extra engine at the moat, just about to start, was ordered, by which 2,500,000 gallons of water will be raised.

## SOUTH STAFFORDSHIRE MINES DRAINAGE ACT 1873.

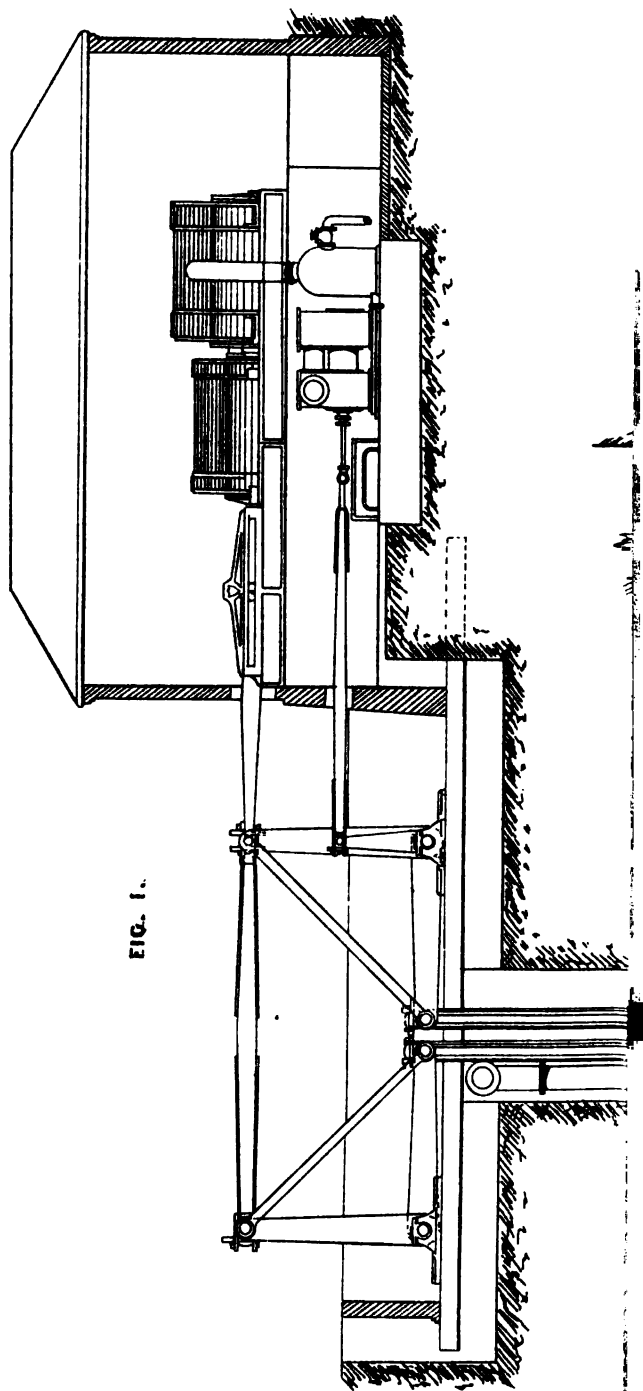
## SKETCH OF MAP REFERRED TO IN ACT.

By E. B. MARTEN, of Stourbridge, Civil Engineer.

Boundary of part colored Red in Map. — — — — —  
do. do. do. Green do. - - - - -  
Bentley Great Falls. ....  
Railways & Stations. ————  
Streams. ~~~~~







## RESULTS.

Fourteen months later than the date of the sketch which has been given, the Hathorn, Davey & Co. engine, therein referred to as "probably the largest pumping engine ever erected for the purpose of mine drainage," was successfully at work.

The Colliery Guardian of July 23, 1886, says:

Heartily do we congratulate the men of Staffordshire upon the attainment—as far as yet the attainment is practicable—of the project upon which they set their hearts when they obtained the act of Parliament which incorporated the Mines Drainage Commission. Strict and diligent attention to the surface is the secret of successful and economical mines drainage. Leave the surface to take care of itself and pumping will only ex-emply further the myth of rolling the stone up the hill, or the inextricable mystery of the fabled Penelope's web—the work will be hopeless and will recur again and again.

Mr. E. B. Martin's surface drainage works would be more complete if as much mounry were available to the commissioners as they could profitably expend in that department of their service; but as the works at present exist, their operation in preventing the descent of water into the mines is amazingly successful. Indeed, had it been possible to bring the surface as a whole well in one drainage level after certain pounds had been cleared, little would have been left for the pumps to do. But such a result is not possible. As respects a portion of the district, the pumping arrangements have had therefore to embrace the permanent use of powerful pumping machinery. Such machinery has been laid down in the center of the 13 square miles (about) of underground water known as the Bilston pound.

Having made a happy choice in their selection of a mining engineer, the commissioners have carried out completely the recommendations of Mr. E. Terry, who has now, by the north and south levels which we last week described, brought to the splendid Bradley pumping engine, which Messrs. Hathorn, Davey & Co., of Leeds, have supplied, the water of the Bilston Pound in quantity sufficient to keep the pump at full work throwing out 5,000,000 gallons every twenty-four hours.

At this rate it is hoped that certainly within twelve months the whole submerged area will be freed from the 70 yards deep of water which in some places is known to be lying there. The shallowest seams may indeed be again workable only a few weeks hence. When the accumulated water has been drained off, the Bradley engine will be available for the permanent pumping of the area within the sphere of its action, which area it was impossible to bring under the influence of the surface-drainage works. It will soon be possible to shut down a pumping engine which is costing £1,400 a year; and such are the possibilities, resulting in great part from well-planned surface drainage and skillfully designed underground tunneling, that half a dozen pumps, at a yearly cost of £7,000, will do that which in 1875 some seventy pumps were incapable of effecting at an annual outlay of quite £75,000. The Mines Drainage Commissioners merit all the success which a revival in trade has, we trust, in store for them.

The Iron and Coal Trades Review of the same date, July 23, 1886, concludes an article on the subject as follows:

This Bilston Pound is practically a great underground sea, extending from Wolverhampton to Walsall, and covering an area of 14 square miles, and the reopening of the mines in that area, which is predicted before long, cannot but have an important influence on the future of the South Staffordshire district. We are told that at least thirty abandoned mines will be rendered workable. In 1875 to pump the water from the Bilston and Tipton mines the commissioners had seventy small and antiquated engines, which they had taken over from the colliery owners, and the working of which cost them £80,000 a year, but these have been superseded by half a dozen powerful modern engines, which can be worked efficiently for £7,000 a year. The Bradley engine, just completed by Messrs. Hathorn, Davey & Co., of Leeds, who have similar but smaller machines at the Severn and Mersey tunnels, is one of the largest in the Kingdom. It has pumps with two 27-inch plungers, each with 10-foot stroke, and at each stroke 496 gallons of water are raised from a depth of 380 feet; at seven strokes a minute the pumps will raise 5,000,000 gallons of water in twenty-four hours. It is calculated that within six or twelve months, according to the rainfall, the whole of the water will be pumped out, and the lowest workable portion of the new mine seam laid bare, while some of the coal near to the surface about Willenhall and Portobello will probably be got at by its owners within the next month or

two. The iron manufacturers of the district will profit considerably by the unwatering of the pits, as they will be again able to get a superior quality of fuel close to their mills, instead of having to bring it in at much cost from other localities. A great and important work to South Staffordshire is now in a fair way for realization, and we must congratulate the commissioners and their engineer on the success that has so far attended their labors.

F. H. WIGFALL,  
*Consul.*

UNITED STATES CONSULATE, *Leeds, August 24, 1886.*

## PRODUCTION OF SUGAR AND RICE IN THE HAWAIIAN ISLANDS.

### REPORT OF CONSUL-GENERAL PUTNAM.

#### THE HAWAIIAN ISLANDS.

The Hawaiian Islands are situated in the North Pacific Ocean, longitude  $157^{\circ} 48' 45''$  and latitude  $21^{\circ} 18' 23''$ . The nearest coast line is California, 2,100 miles distant. Puget Sound is 2,600 miles, Tahiti 2,400 miles, Sydney 4,100, Hong-Kong 4,500, and Panama 4,200 miles. They are almost on an exact straight line from Panama to Yokohama and Hong-Kong, and within 150 or 200 miles of a straight line between San Francisco and Sydney. The group consists of four large and four small islands, with a total area of 6,320 miles. There are several small islets, which are not worthy of further mention. The total population of the Kingdom at the last census (1884) was 81,000, of which 42,000 were natives, 18,000 Chinese, 9,377 Portuguese, 2,066 Americans, 1,200 English, and the remainder distributed among various nationalities. The Japanese have increased, through the facilities afforded by the Government immigration agencies, to about 2,500, and despite the barriers officially interposed, the Chinese have increased their numbers to more than 20,000.

The islands are of volcanic origin, the elevations being thrown up to a great height in abrupt ridges, with narrow valleys between and about the base, which contain the tillable land of the country. Two of these summits of H  w  i are about 14,000 feet high, and another nearly 8,000. On this island the great volcanoes Mauna Loa and Kilauea are located. The latter is constantly active, and the former occasionally so. The group is within the course of the trade winds, which are almost constant during nine months, and at frequent intervals during the remaining three months of the year. To these genial winds is attributable the wonderful uniformity of the climate, the usual variance of which, at sea level, is between  $67^{\circ}$  and  $85^{\circ}$ ;  $57^{\circ}$  and  $90^{\circ}$  are sometimes reached, but infrequently. The windward sides of the group are very wet, the rain falling a large part of the time, the annual precipitation varying from 150 to 200 inches.

The leeward sides are, with some exceptions, extremely arid, but when the mountains are high enough to deflect the trade winds, the lee becomes subject to daily alternations of land and sea breeze, and is very moist. The lofty interiors are wholly unfit for cultivation. A rank grass grows upon the decomposed lava, and in the narrow ravines, where great numbers of wild cattle, goats, and hogs abound, which are hunted and killed for sport or for their hides. In some localities the decomposition is so thorough that very profitable cattle ranges filled with grazing stock are to be found. The lands which are adapted to the culti-

vation of the great staples, sugar and rice, and of coffee, fruits, and table vegetables, are, as I have stated, limited to a narrow marginal ring bordering upon the sea and surrounding the mountain interior of each island. The entire quantity of such land will probably not exceed a hundred and twenty thousand acres on the group, and of this quantity much would be inferior.

The products for export are exclusively agricultural. There are no manufactories in the Kingdom which put their wares on the markets of the world. The capital and energy of the country are almost entirely absorbed in the production of rice and sugar. Within the year a number of contracts have been made in England for Hawaiian wool, and others are on the tapis, giving ground for belief that there is a future for that industry here. A few hides and pelts are exported, and there is a greater foreign demand for Hawaiian coffee than the growers can respond to from their limited supply. The climate and soil are peculiarly adapted to sugar and rice, permitting two crops of the latter to mature in a single year, and giving the sugar-cane continuous summer, so that a single crop can have from sixteen to twenty months, the time usually occupied to complete its growth.

#### SUGAR.

Sugar is the great staple. Immense capital and energy and great intelligence have been spent upon the development of the industry, and the result is an increase in the yield from 12,000 tons in 1875 to an estimated yield of 75,000 to 80,000 tons this year (1883). There are 75,000 acres of land possible for cultivation of cane; but if this should be all utilized, with but one crop in two years, as is the custom, the average acreage at best would be but half that quantity. There are plantations, however, situated on the low lands and subject to frequent inundations, and the rich accumulations which they carry with them, which yield a yearly crop, not requiring rest. Two-thirds of the sugar plantations are owned or leased by Americans, and all the crude sugar is shipped to San Francisco refiners. American tact and breadth were never more forcibly illustrated than in the development of this industry. Without labor, with the adverse surroundings in the topography of the country, and other lack of facilities to get their crops to ports for shipment, through patience and the wonderful energy which distinguishes our race, they have transformed the barren valleys and foot-hills into the most productive cane-fields in the world, and brought to their aid all the devices and assistants in machinery that the genius of the age has offered.

#### LABOR QUESTION.

As I have intimated above, the labor question was the serious problem in the outset. To produce the cane a very large number of common and cheap laborers was necessary, and they are not upon the islands. The natives are not adapted to continuous toil, the climate was too oppressive for the white race, and it was not deemed advisable to flood the islands with Chinamen, the only class of foreigners offering their services. The result was Government interference and aid. A board of immigration was instituted, and agents sent to Norway and Sweden, the South Sea Islands, and Portugal. Men were employed on three years' contracts by the Government and recontracted to the planters. Within the past year Japan has also been added to the countries from which laborers are to be employed, and two ships have arrived at the



port of Honolulu with Japanese immigrants, who are contracted to the planters. By this means the demand for labor has been partially met, but the Government is still extending its efforts in Japan and Portugal to meet the increasing requirements of the planters. The contracts slightly vary in their conditions, but generally embrace free passage to the Kingdom, advance wages, board, lodging, medicine, and medical attendance, and are for three years, at an average salary of \$9 per month for males and \$6 for females. These contracts vary but slightly from the system in vogue since the dawn of their civilization. It grew out of the early contact of the natives with the marine customs, and was copied from the shipping articles of vessels which frequented their harbors. The employer and employé are compelled to fulfill their contracts; laborers who desert are arrested, fined, and returned, the same as are deserters from merchant ships. Over these foreign laborers the Government undertakes a paternal care and guardianship, and, through inspectors, their condition and treatment are constantly investigated, and when they are improperly used they are withdrawn and recontracted. As the immigrants are unused to the work, the climate, and the people with whom they come in contact, the labor system is not yet as satisfactory as the planters and Government desire. As a great deal of misrepresentation has gone forth as to the nature of these contracts, some claiming the system to be one of peonage, I attach an original contract between a Japanese laborer, the Government, and employer:

#### HAWAIIAN LABOR CONTRACT.

In pursuance of the agreements hereto attached, the said Mori Chiodjuro and wife did arrive in this country on the 8th February, and in accordance with the said agreements has been directed to labor for L. A. Thurston, guardian estate C. H. Alexander, as a laborer, at Mani.

Now, therefore, the said L. A. Thurston, guardian estate of C. H. Alexander, stipulates and agrees to and with the said board of immigration of this Kingdom that he will faithfully pay to the said C. Mori and wife \$15 per month for said period of three years, beginning from the commencement of such service.

And the said L. A. Thurston, guardian estate of C. H. Alexander, further hereby stipulates and agrees that he will faithfully keep and perform all the other stipulations in the said agreements set forth to be kept and performed by the said board, in favor of the said C. Mori and wife.

And the said L. A. Thurston, guardian estate of C. H. Alexander, agrees with the board of immigration that the contract for the service of the said C. Mori shall not be transferred to any third party during the term of this contract without the consent of the said board of immigration or its agent.

And it is further understood, stipulated, and agreed by and between the parties to this agreement that it shall be the right of the said board of immigration, at any time during the time in this agreement stipulated for its duration, upon the representation of the said C. Mori, to cancel this contract for any cause deemed by the said board to be sufficient, refunding to the said L. A. Thurston, guardian estate of C. H. Alexander, such proportional sum of the amount advanced by the said L. A. Thurston, guardian estate of C. H. Alexander, as the unexpired portion of the time of service agreed upon may bear to the whole time hereinabove set forth.

But if the agreement shall be canceled by magistrate for non-fulfillment or violation of any of the conditions of the agreement on the part of the said L. A. Thurston, guardian estate of C. H. Alexander, then no refunding will take place.

And it is further understood and agreed that all taxes levied by the Government shall be paid by the employer, without deducting the same from the wages stipulated. And, further, during the continuance of this agreement the said C. Mori and wife are to be properly lodged and be provided with good, sufficient, and suitable food and medical attendance by the employer.

In testimony we have hereunto set our hands, at Honolulu, Oahu, this tenth day of February, 1886.

THE BOARD OF IMMIGRATION,  
By CHAS. T. GULICK,  
*President.*

This memorandum of agreement between the Hawaiian Government, represented by R. W. Irwin, special commissioner and special agent of the bureau of immigration, and Mori Chiodjuro and wife, voluntary passengers per steamship City of Tokio, from Yokohama to Honolulu, witnesseth:

I. The Hawaiian Government agrees to furnish steerage passage from Yokohama to Honolulu, free of expense, to C. Mori and Kono, his wife, they having expressed a desire to go to Honolulu as voluntary passengers. This free passage includes ordinary food on the voyage.

II. On arrival at Honolulu the Hawaiian Government agrees to obtain employment for the said C. Mori as an agricultural laborer for three years, and also similar employment for Kono, his wife, if desired. Until such employment has been obtained the Hawaiian Government will give the said C. Mori and Kono, his wife, lodging commodious enough to secure health and a reasonable degree of comfort, and an allowance for food of \$6 per month to the said C. Mori and \$4 per month to the said Kono, his wife.

The Hawaiian Government will furnish to the said C. Mori and his family, as aforesaid, cleaned rice at a price not to exceed 5 cents per pound, and fuel for cooking free of expense.

III. The Hawaiian Government guarantees to the said C. Mori wages at the rate of \$9 per month, and to the said Kono, his wife, at the rate of \$6 per month, payable in Hawaiian or United States gold or silver coin, with allowance for food and lodging, as in Article II. But the said C. Mori must furnish blankets and bed-clothing for himself and his family.

IV. The Hawaiian Government agrees to furnish the said C. Mori and his family good medical attendance and medicines free of cost to them.

V. The Hawaiian Government guarantees that twenty-six days of ten hours each, in the field, or twelve hours each in the sugar-house, shall, within the meaning of this agreement, constitute one month's service as an agricultural laborer. The hours of service shall be counted from the regularly established moment for departure to work in the field or in the sugar-house, and shall include the time occupied in going to and from work.

VI. The said C. Mori and his family shall be exempted from all and every kind of personal tax for three years from the date of arrival at Honolulu.

VII. Twenty-five per cent. of the sum received by the said C. Mori and Kono, his wife, as wages, shall be handed over to the Japanese consul at Honolulu, who will duly receipt therefor, and deposit the same in the name of the said C. Mori in the Hawaiian Government Postal Savings Bank, to be kept on interest at the rate of 5 per cent. per annum, and not to be withdrawn except the Japanese consul recognizes the absolute necessity of such withdrawal and signifies his approval, in writing, of the application of the said C. Mori therefor.

Signed and sealed in triplicate at Yokohama this 26th day of January, 1885, one copy to be retained by each of the parties hereto, and one to be left in the custody of the Kanagawa Ken Rei.

R. W. IRWIN,  
*His Hawaiian Majesty's Special Commissioner  
and Special Agent of the Bureau of Immigration.*

I hereby certify that the above agreement has been signed and sealed by both parties in my presence.

MORI CHIODJURO,  
*Voluntary Passenger.*

\_\_\_\_\_  
*Kanagawa Ken Rei.*

I, C. Mori, voluntary passenger from Yokohama to Honolulu, in accordance with agreement dated Yokohama, 26th January, 1885, acknowledge to have received from R. W. Irwin, His Hawaiian Majesty's special commissioner and special agent of the bureau of immigration, \$15, which I hereby pledge myself to refund to the Hawaiian Government, out of my wages, at the rate of \$1 per month, after my arrival in Honolulu, the said sum having been advanced to me by the Hawaiian Government as a loan, without interest.

MORI CHIODJURO.

Additional agreement between the Hawaiian Government, represented by Charles T. Gulick, minister of the interior, party of the first part, and C. Mori and wife, party of the second part, witnesseth that whereas the said party of the second part, in pursuance of a certain agreement with R. W. Irwin, special commissioner and special agent of the bureau of immigration of the Hawaiian Government, signed in Yokohama on the 26th of January, A. D. 1885, did arrive in this country on the 8th of Feb-

ruary, A. D. 1885, and in accordance with said agreement the Hawaiian Government has obtained employment for said C. Mori and wife as agricultural laborers: Now, therefore, it is agreed that said party of the second part and his wife shall duly and faithfully perform all lawful and proper labor for L. A. Thurston, guardian estate of C. H. Alexander, in the island of —, for and during the space of three years next succeeding the date of commencement of such service, in accordance with the terms and conditions of said agreement, dated Yokohama, 26th of January, A. D. 1885, which are hereby confirmed by both the undersigned parties to this agreement.

Signed and sealed at Honolulu the 10th day of February, A. D. 1885.

CHAS. T. GULICK,

*Minister of the Interior and President of the Bureau of Immigration.*

MORI CHIODJURO.

### METHODS OF CULTIVATION.

The methods of cultivation of the cane vary in localities in accordance with character and structure of the land, the facilities for irrigation, &c. I subjoin a condensed summary of a report made at a late meeting of the planters by Mr. J. M. Horner, one of the most intelligent of their numbers, covering the matter of cultivation:

He enforces the necessity for improved cultivation and attention being paid to the selection of seed, a proceeding which had resulted in such a marked increase in the yield of beet sugar in Germany. Twice plowing and twice harrowing, if well done, was a sufficient preparation for the furrow plow to follow. If, however, a grass sod or trash was turned under at first plowing, sufficient time should elapse to allow the trash to decay before the second plowing, which should be done just before planting, thus getting rid of all weeds while planting was going on. The furrow plow was recommended for making seed furrows and ditches. Cane rows should be between five and six feet apart. This admits of the free use of the cultivator without injuring ditches, &c. It had been found advantageous to run a one-horse subsoil plow in the bottom of the furrow just ahead of the planters, loosening the soil from two to six inches, making a nice, fresh seed-bed, the seed to be planted under the bottom of the furrow in the mellow soil. July was the best month to plant below an elevation of 700 feet; at an elevation of 1,200 feet or more May was not too soon. In after cultivation, the report strongly urges the use of the cultivator, which nearly dispenses with the less effective and more expensive hoeing. An example of this is given in the case of the Spreckelsville plantation when raising the first crop. The cultivator was used with great success on one part of it. The soil was loosened, weeds killed, and drains scraped at \$5 an acre, while it cost another overseer \$20 to have his section scraped with a hoe. The weeds got the better of him and the cane was stunted. The cane treated by the cultivator yielded one ton an acre more than the cane under the hoeing process. Never let weeds grow; put the cultivator through as soon as the cane begins to make its appearance above the ground. Keeping the soil loose and fine on top by cultivation was, in a measure, both food and water to the crop, as it prevented evaporation. Experience showed that the best way to care for cane the first six months after planting was to commence cultivating when the young cane began to come up, and about the time it was all up go over it again with a cultivator, going around each row, and each time roll down a little fresh soil around the cane, and to continue until the cane was too large to allow of further cultivation. One cultivator would suffice for 60 acres, rows five and a half feet apart. During the season the soil thrown out from the seed furrow worked back, leaving the land about level at the finish; the soil would be loose, and might be freed of weeds with very little hoeing. The filling up of the furrows was only applicable to rainy regions. This course was pursued the past year at Kakaia with gratifying results. The difference in labor alone between cultivating and hoeing was that of one man to four acres or five men to one acre. This was a difference which no planter was justified in slighting, not to speak of the benefit liberal cultivation was to the cane.

In addition to the foregoing generalization, I append an exhaustive reply to the questions forwarded by the Department by Col. Z. S. Spalding, formerly American consul at this port, but now one of the most extensive and successful sugar-raisers in the Kingdom, on the whole question of sugar production:

(1) *Description of land used in the production of sugar.*—All the land in this country is decomposed lava, mixed in a few places with coral sand. It varies much in character, even where the conditions of temperature, moisture, &c., are similar; but the

greatest difference is to be found in the difference of moisture or the action of water. On the windward side of the islands, where the rainfall is greatest, the soil is deepest and the lava most decomposed; but on the leeward (or south and west sides), where decomposition has not gone on so generally, but where the washings from the mountains have settled on the plains below, the richest soil is found. For the production of sugar-cane we prefer a clayey soil, sufficiently porous for proper drainage, but fine enough to hold necessary moisture. The color varies from intense red, like iron rust, to perfect black, either of which is generally indicative of better soil than are the bright yellows, bluish gray, &c. Lands not too near the sea, but low enough down to receive the washings from above, are generally the best for sugar-cane. Salt air, spray, and too much sand are all bad for the same.

(2) *Customary tenure of land if leased.*—Leased land (which includes some of the largest tracts) is generally held under contracts or leases from the "commissioners of crown lands," or the descendants of the old native chiefs, for a term of from ten to thirty years.

(3) *Customary rent of land if leased.*—Lands rented or leased for the first time, or for the starting of a plantation (with all its expensive outlays and improvements), are necessarily at low or nominal rentals; but where leases have expired and been renewed, or where small patches have been rented, the rentals have gone as high as \$2 to \$5 per acre per annum.

(4) *Present market value of land.*—This depends entirely upon location, size, and quality. A general statement of values would be about as follows: Best sugar-cane land, \$25 to \$50 per acre; best pasturage lands, \$2 to \$5 per acre; best wooded lands, \$1 per acre.

5. *General condition of labor—character and nationality of laborers.*—The general condition of labor in this country may be said to be poor, although it is at present a little better than in years past. This is largely owing to the increased investments in sugar production, after the treaty of reciprocity with the United States, without proportionate increase of labor—the supply having always been short of the demand. The nationalities and characteristics are, say: (1) Natives of the islands—the best labor for general purposes—quiet and peaceable; active and quick to learn; easily fed and provided for, but shiftless and improvident of themselves. They require mild but firm discipline, and to be kept from the temptations of liquors, &c. (2) Portuguese.—Strong and good for hard work, but not easily managed. They require expensive food, if fed by the employer, but live cheaply when left to themselves and allowed ration money. (3) Chinese.—Good labor for most of plantation purposes when the supply is sufficient to prevent their taking advantage of the necessities of the employer. As day laborers, at high rates of wages so that they are not obliged to work regularly, they are unsatisfactory and hard to deal with. (4) Japanese.—Not so quick and apt as the Chinese, but quiet and docile, and steady workers—especially in field work, with hoe, &c. They prefer their own style of food, and, like the Chinese, do not eat meat enough to become strong. (5) Natives of the Southern islands.—But few in the country; some of them are indolent and worthless; others are next best to our native laborers; and, (6) Germans, Norwegians, &c.—I have had no personal experience with these people, as contract laborers, but have employed a few for special purposes. They are, I think, a failure as plantation laborers.

(6) *Description of tools, machinery, and appliances used in the business, with their cost.*—Almost everything is used on a sugar plantation; at least, the list comprises so great variety it would take long to enumerate. The principal items may be given, viz, plows, steam and horse power; harrows, hoes, shovels, picks, mattocks, axes, knives (cane), hatchets, &c., for the field work; locomotives, cars, wagons, carts, sleds, flumes, &c., for transportation of cane to mill, &c.; engines, mills, boilers, clarifiers, evaporators (open and vacuum), vacuum pans, centrifugals, &c., for the manufacture of the sugar; and bags, kegs, barrels, &c., for packing and shipping products. The carpenter's and blacksmith's shops, and other repairing departments, must be kept supplied with all kinds of tools, ropes, iron, lumber, &c.; and wire, posts, nails, staples, &c., for fencing.

The cost of these articles varies with kind and quality, but may be stated at from 25 per cent. to 50 per cent. above the prices for same in New York or San Francisco. The machinery and tools for a plantation (favorably located) to make 10 tons of sugar per day during the season will average in cost, say, \$75,000 to \$100,000.

(7) *Customary wages of common laborers and of manager, superintendent, booker, and skilled laborers, and amount paid agents.*—Wages to natives, who find themselves with food, average \$20 to \$25 per month; of the Portuguese, \$9 per month and board, or an allowance of \$7 for food, also payment of passage money and expenses, amounting to about \$125 each, on three years' contract; Japanese, \$9 per month and \$6 for food, and payment of passage money, &c., amounting to about \$60; Chinese, \$10 per month and \$6 for board, where contracted with, or \$18 to \$25 per month as day laborers. Where men are contracted with the employer has to pay taxes and furnish medical attendance, &c., free of charge. Women and children are paid in proportion.

Smart laborers, helpers, teamsters, drivers, and mill hands are paid higher. Skilled laborers, such as carpenters, blacksmiths, masons, &c., are paid from \$2 to \$8 per day; engineers, from \$100 to \$150 per month; sugar-boilers, \$100 to \$125 per month; bosses of gangs, or lunas, in field, &c., from \$50 to \$100 per month; superintendents, \$150 to \$200 per month; managers, \$2,500 to \$5,000 per year. Agents are generally paid 2½ per cent. on net sales as commission, and all expenses on the sugars, and sometimes a purchasing commission of 2½ per cent. on all purchases made for the plantation. Interest is charged on advances at the rate of 9 per cent. and accounts made up quarterly. A commission of 2½ per cent. is also charged in San Francisco and deducted from the gross sales.

(8) *Mode of payment and hours of labor.*—Payment to laborers is generally made monthly (though sometimes weekly) and they are allowed the days actually worked, counting 26 days to the month. A day's labor consists of 10 hours in the field, or 12 hours in the boiling-house, and generally between 6 o'clock a. m. and 4.30 p. m. (with half hour for dinner) for field work, and 6 o'clock p. m., if necessary, for mill-work.

(9) *Subsistence of laborers, per capita.*—I think most plantations are now giving their laborers money in lieu of rations. It is not the best thing to do, as laborers seldom eat the food most beneficial to them, if left to themselves; but it saves a great deal of trouble and complaint and in some instances induces the laborer to raise his own vegetables, &c. Where food is furnished to Chinese, Japanese, natives, &c., fish and rice form a prominent part of the ration. If salt fish (as salmon), about half a pound per day would suffice. Fresh beef, about a pound, rice, one and a half pounds; bread, 1½ pounds. Vegetables would only be given to Portuguese, Norwegians, &c., and would consist of potatoes and beans. Tea, sugar, and salt would also be added. No regular or definite ration has ever been decided upon.

(10) *Liquors.*—Are never served or allowed, save when ordered by medical authority.

(11) *Medical attention and medicines.*—All labor contracts require free medical attention and medicines. The government stations physicians in districts near to most plantations, and these are employed by the planters. Some plantations, like my own, employ a skilled physician for the sole benefit of its people.


(12) *Clothing—description, quality, quantity, and cost per each person for one year.*—Laborers are never furnished with clothing at plantation expense. In this country the climate is so temperate and even, clothing is a matter of little importance beyond mere covering of nakedness. The usual clothing of laborers consists of the "jumper and overalls," so common in the United States, made of coarse blue cotton or jeans, and costing about \$1 a suit. Four suits a year, with hats, would cost say, \$5. Shoes or boots are unnecessary, but are worn by many. I think, however, \$10 per annum is more than the average paid by laborers for clothing.

(13) *Description and rent of dwelling.*—Dwellings for plantation laborers are furnished free of rental by the plantations. The rooms are generally about 12 feet square, and for unmarried men contain bunks, as in ships. Married men have one or more rooms, according to size of families. On my own plantation (and I think on some others) are cottages with plots of land for gardens, &c., for rental to such higher class of laborers as may be able to provide for themselves by working a part of their time for the plantation. Rentals are nominal, and depend upon the labor to be performed and the wages paid to the laborer. This plan is only useful so far as the best class of our laborers is concerned. Ordinarily they prefer to live in quarters or gangs and have their food in common. The married Portuguese cultivate garden patches, as do some of the Japanese and Chinese, but not to any great extent.

(14) *Cost of labor by the unit of customary measure by which product is sold—that is, how much does it cost, in American dollars, to produce a ton of raw sugar ready for export?*—It depends entirely upon circumstances. It generally costs more to produce a ton of sugar from land yielding two tons to the acre than from land yielding more. The reason is, that where the cane grows rapidly and thickly it covers the ground quicker and the weeds have less chance. Again, the cost of plowing, &c., is less per acre on good, mellow land, and the expense of cultivation, irrigation, &c., no more than it would be on land capable of giving only small returns. Therefore, the field work is more a matter of acres than tons. But giving average quality of land of the whole country, and average milling expenses, I should say the cost of a ton of raw sugar (counting all grades, No. 1, No. 2, No. 3) would be about \$80 to \$90, not counting freights, insurance, interest, commissions, &c.

(15) *What number of single day's work does it require to produce a ton of raw sugar, ready for export, and what is the cost of the labor alone?*—Taking the average of lands and the average of labor, I should say it would take about sixty days' labor, besides the animals or other power used in plowing, &c., and the cost would not be far from \$50 per ton. The cost of transporting the cane to mill, milling expenses, including fuel, and expenses of bags, packing, &c., would be about \$30 to \$40 per ton more. The expense might be less on plantations favorably located, but in some instances it would be more.

(16) *Describe mode of producing cane, of milling same, and of bagging and putting sugar in condition for export.*—In this country we have two methods of producing sugar-cane, viz, where we depend upon the natural rainfall, and where we resort to irrigation. If the first method be employed, the practice is to suitably prepare the land by plowing and harrowing until it is mellow and free from weeds, grass, &c., and then to plant the joints of cane in furrows or lines, in such quantities and distances as experience may dictate. Each joint of the sugar-cane produces or sends out one leaf and one bud or eye. The leaf grows out of the joint itself (or the junction of the joints) and completely envelops the stalk, covering and protecting the bud or eye. The buds, when covered with earth, send out shoots or stalks, and are the means of propagation, no seed of the cane being known. It is a curious fact that these buds come out alternately, on opposite sides, and the opening of the leaf is opposite the bud it covers, so that the bud when young and tender is perfectly protected by its leaf. When the leaf is young and green it is closely wrapped around the stalk; as it matures it unfolds itself, and as the stalk grows upward and matures the lower leaves wither and die. When the joint is planted it is stripped of its leaves (joint in this instance meaning the whole length of the piece planted), and where the leaf had been previously attached the roots spring out. Then the bud or eye, if healthy, sends out its shoot, with joints and eyes in their turn, and each eye that remains under the ground reproduces itself, which is called stooling. The best cane for planting is, of course, that which is shortest jointed, as having the most eyes to a given length. The length of joints, or distance between joints proper, varies from 1 or 2 to 10 or 12 inches. Long-jointed cane is considered best for grinding. The cultivation of the cane stalks simply requires the weeds and grass to be kept down, and the soil loose and mellow. This is done by means of small plows and cultivators drawn by one horse, or a mule, and some hoeing; unless where irrigation is practiced, and then by the hoe alone, the reason for the latter being that the cane joints must be planted in deep furrows (where irrigation is intended) in order that water may be run in as required; and plows or cultivators would tear down the sides or banks of the same; also, because the weeds and grass grow most in the bottom of the furrow, where there is the greatest moisture, and in amongst the cane stalks where only a hoe can be worked. In the State of Louisiana they have too much moisture, and they plant their cane upon ridges to allow drainage. In this country water is the great desideratum, and a contrary method is employed. As the cane grows and forms stalks it sends forth leaves, as before described. These perform their office and then wither and die from the bottom upwards, and good cultivation requires that they shall be removed, or stripped from the stalk to admit air and light—necessary to the proper maturing of the cane. This is generally done two or three times in a season. Although there are different kinds of cane—flowering and non-flowering—most of the cane used in this country flowers or tassels in the month of November, if old enough. After flowering it stops growing, the top dies, and it sends out side shoots from the eyes near the upper joint. This is detrimental to its sugar-producing qualities, and therefore the canes are to be cut as soon as convenient after the flowering season. Having no frost in this country (at low altitudes) the young cane that does not flower continues to grow all the year through, and on this account we are able to produce large crops to the acre by having long seasons of growth—say 16 to 20 months. But, of course, the cultivation is more expensive.

When the cane is matured it is cut, by means of hatchets or knives, near the bottom—in fact, just under the ground, if possible—and the stalks (stripped of their leaves and worthless tops) are conveyed to the mill for grinding. This is done in carts, wagons, sleds, or by railway in cars, horse or steam power, or by means of water-flumes when circumstances admit. My plantation is so located I can flume my cane to the mill from fields even three miles away. It is the best and least expensive method known. The flume is built either in a V shape of boards placed at right angles, or with flat bottom and V sides, as , and supported on trestles, with a grade or fall varying from 1½ to 3 feet in a hundred. The canes must be cut in lengths to suit the grade, size, and character of the flume. My flumes are capable of delivering from 40 to 50 tons of cane to the mill per hour, though seldom, if ever, used to full capacity. The cane is delivered on the cane carrier of the three-roller mill, and, with the aid of two men to feed, it passes through the rollers of the same under heavy pressure, and the juice, to the extent of from 50 to 65 per cent., is extracted. Some of us then pass the bagasse or cane trash through a second (two-roller) mill, where from 10 to 15 per cent. more juice is extracted. This is called double crushing. If water is used on the bagasse before the second grinding it is called maceration.

As the juice is extracted it is pumped through the heaters into the clarifiers, or large iron tanks, with copper or brass steam-coils, in which the juice is heated to a temperature of 200 to 210 degrees and lime added to correct the acidity and aid in defecation. Afterwards the juice is thoroughly cleaned, by means of heat, and the water evaporated from it until the concentrated liquor stands at about 26 to 30° Baumé, when it is ready for the vacuum pan. In the best works this concentration

is done in either the double effect or triple effect, where the steam or vapor from the first pan is made to do the boiling in the next, and so on, the whole set working under vacuum of different degrees. In my works I practice concentrating before cleaning, as I find it easier to delectate or clean the heavy liquor than the light juice.

The work of the vacuum pan is to take in a certain quantity of this concentrated liquor at a temperature of, say, not above 150° Fah., and to boil it down to what is known as the striking point, i. e., about 40° Baumé. When the sugar boiler thinks he has about the right quantity and density, he admits a charge of cold liquor, which has the effect of separating the small particles of saccharine, or crystallizable sugar, and is called starting the grain. After proper boiling, or concentration, another charge of cold liquor is taken into the pan, and the effect is to build up or enlarge the grain so started, and the operation is continued until the vacuum pan is sufficiently filled with sugar of the required grain. Closing in, or finishing the strike, consists in boiling the mass to such state or consistency as is best for drying, and the vacuum is then broken, and the whole mass discharged into a receiver or mixer, ready for the driers.

The drying is done by centrifugal motion, which separates the molasses, by whirling it through fine wire cloth, or screens, and leaving the dry sugar in walls on the inside. The dry sugar is then put in bags, or other containers, ready for the market; while the molasses is reboiled in the vacuum pan, and made into sugar of lower grade.

(17) *What are the local or special taxes which must be added to the total cost?*—The only taxes are the personal, or road, school, and poll tax, amounting to, say, \$5 a year per capita, and the tax of 75 cents on each \$100 real estate, or personal property, except some very light special taxes on particular property, as carriages, carts, dogs, &c., and the license system which requires the payment of certain sums annually for engaging in certain kinds of business. There is nothing like revenue or export taxes.

(18) *What is the cost per ton for the transportation of sugar from the plantation to San Francisco, including shipment to Honolulu, when sent through this port?*—Freight to Honolulu, from the various plantations, averages \$3 to \$3.50 per ton of 2,000 pounds. From Honolulu to San Francisco \$4 to \$5 per ton; insurance, 1 per cent. to 1½ per cent.: through charges in Honolulu, 1 per cent.

Counting all expenses, losses on labor, interest, wear and tear, &c., few plantations do much more than make a living on net sales at \$100 per ton, or 5 cents per pound all around. Some do better and some worse, as there is a great difference in the expenses of a plantation favorably located and with good soil, water, &c., over one that is not so situated. And there is also great difference in the economy of administration or management, even where the natural advantages are equal. It is hard work and constant anxiety at best.

The rate of interest in the Kingdom is an average of 9 per cent. There are no usury laws.

#### MOLASSES.

The percentage of molasses to sugar in the crop of 1884 was 110,530 gallons to 142,654,923 pounds of sugar. Improved machinery is constantly diminishing the quantity of molasses, but the product must be added to the results to determine the total profits of the business. Of the sugar product above stated, all but 17,466 pounds, which was exported to New Zealand, was sent to the United States.

#### RICE.

The rice product is only second in importance to sugar. The fields are called patches, most of them having been formerly used by the natives in raising their favorite food, taro, and are often not more than an acre in extent. When new lands are occupied banks of earth are thrown about the margin of the patches and the soil thoroughly worked; water is then run in and allowed to remain until they are well saturated. The paddy (unhulled rice) is then sown like oats, sinking into the soft soil. It is allowed to grow until it is 6 inches in height, when it is transplanted in other patches, in rows about 6 inches apart. The plants are then continually flooded with water, the fluid not more than 6 inches in depth, for about five months, or until the grain has formed and begun to harden. The water is then drawn off and the paddy allowed to ripen. It is then cut with sickles, dried, and thrashed, the old American system of thrashing upon a floor with horses being in vogue. It is then winnowed, bagged, and sent to the mill for hulling and polishing, the

same process and machinery being used that are employed in the rice-mills of Louisiana. The rice, now ready for market, is packed in bags, each containing 100 pounds, and is ready for export.

The climate, as in the instance of sugar, is peculiarly adapted to the production of rice of a superior quality and in unequaled quantity, its evenness of temperature permitting the raising of two crops per year without any especial strain upon the soil. The fields are confined to the lowlands, where abundant irrigation can be obtained, and to the slight elevations, when artesian wells can be successfully operated. They are the highest-priced lands in the Kingdom, if a price can be fixed upon them, as none have been in the market for a number of years. Nominally, they range from \$100 to \$200 per acre, owing to facilities for irrigation and getting the paddy to mill and market. They are leased on contract, from five to twenty years, on rentals varying from \$15 to \$30 per acre.

The total area of land suitable for the production of rice is about 4,700 acres. The local consumption is about 100,000 bags. The export in 1884 was 9,493,000 pounds rice and 46,224 pounds paddy.

Rice culture is almost exclusively in the hands of the Chinese. No other nationality could pay the rentals, endure the exposure, and make a profit. Employers and employes are alike Celestials. The common laborer is employed, under the general contract system, for a given period, but the Government has not been called upon to extend a special protectorate, as in the case of other nationalities. The contract price for labor is \$16 per month and found, or \$22 per month when nothing is furnished. The lunas, or bosses, receive from \$10 to \$15 per month more. They can receive their wages as earned, or in a lump at the harvesting of the crop. The hours of labor are ten to twelve each day. When found, they are supplied with what they require of rice, meat, fish, bread, tea, coffee, or such other provisions as they desire. Liquor is furnished during the period their work requires them to be constantly in the water. They pay their own doctor bills and for medicine. Cost of clothing, from \$10 to \$20 per year. Their habitations are rough board houses, whitewashed, and furnished by the plantation.

To produce one ton of paddy ready for shipment costs as follows:

For labor (26 days) .....	\$22 00
Rent of land (6 months) .....	8 00
Freight to Honolulu (mill) .....	3 00
Milling and bagging .....	10 00
Total .....	43 00

One ton of paddy will produce 1,320 pounds of rice.

Total number of laborers employed in the cultivation of rice in the islands, 1,500.

The machinery used is all after American models and is of American make.

Tools used in cultivation are plows, harrows, and hoes, of American manufacture.

The mills outside of Honolulu are of antique character, of slow process, and run by water or hand power.

The cost of handling, shipping, and delivery at San Francisco is about the same as sugar per ton.

J. H. PUTNAM,  
*Consul-General.*

UNITED STATES CONSULATE-GENERAL,  
*Honolulu, November 12, 1885.*



**SUGAR IN DEMERARA.***REPORT OF CONSUL FIGYELMESY.***LAND AND LAND TENURE.**

The sugar lands are below the sea-level, and consequently have to be drained by open ditches; hence agricultural implements with horse or cattle power are unknown. Under-drainage with steam tillage is now on trial.

Land is held in tenure under lease, and is rented, when in a good locality and well drained by the landlord, at as high a price as \$24 per acre, but an average rent is half of that sum.

The tools used are the spade common to this country, 9 inches by 4½ inches broad, fixed into a long wooden handle; the steel three or four pronged fork; a heavy clay hoe, 8 inches to 6 inches face, 4 inches to 5 inches deep; and the cutlass.

**WAGES OF AGRICULTURAL LABORERS.**

The customary legal rate of wages paid to agricultural laborers here is 24 cents for seven hours in the field, but it is quite customary to work by piece-work, when an able-bodied man working ten hours can complete three tasks for 72 cents.

Women and children are paid proportionately less; payment is made weekly.

**FOOD.**

This is a mixture of native provisions, such as plantains, tannias, cassava, potatoes, pumpkins, and various garden productions. Rice, both native grown, which is very little, and that imported from India, is largely consumed. The breadstuffs used, such as wheat flour and corn-meal, also lard, pickled beef and pork are imported from the United States; but dried salted fish, pickled mackerel, and herrings, also used, come from the British North American provinces.

No food stuffs are imported from England.

It is computed that the subsistence of a laborer for a day amounts to 12 cents, but many, such as rice-eaters, can live on half that sum. I may remark that the Chinese here supply a large quantity of garden products, which are readily bought at very reasonable rates by the ordinary field laborers.

Rum is the favorite drink, and it has demoralized the descendants of the African race to a marked degree here.

**CLOTHING.**

The clothing generally consists of osnaburg trowsers, and striped cotton or checked shirt, and on holidays a suit of tweed. Laborers as a rule go barefooted. Ten dollars a year would cover their clothing expenses. An East Indian does not spend half that sum.

**HOUSING OF THE LABORER.**

Houses are supplied free, built of timber framing covered with American white pine lumber, clapboarded, and roofed with wallaba shingles,

a native product. The rooms consist of an apartment 12 feet wide by 14 feet long, with a veranda in front, and are in ranges of 50 to 100 feet in length, subdivided into rooms as above stated.

Each plantation has a roomy hospital, with complete furnishings, for 5 per cent. of the laborers located on the plantation. An overseer's house is built on brick pillars 12 feet off the ground, divided into rooms 16 feet by 14 feet each, with a veranda on the windward side, much the same as officers' quarters in barracks.

The men are boarded at the expense of the plantation, each one being allowed \$300 a year for board and paid from \$18 to \$40 a month salary besides. Three overseers are the average complement to one plantation.

The sugar works are on a very large scale, embracing all the recent improvements in the extraction of sugar from the cane, the output ranging from thirty to two hundred tons per week. I inclose an estimate of expenses for a crop of 1,620 tons of sugar. Also copy of a report on the production of sugar and rum in a factory here.

PHILIP FIGYELMESY,  
Consul.

UNITED STATES CONSULATE,  
Demerara, February 20, 1886.

*Estimate of expenses for a crop of 1,620 tons first sugar from 900 acres out, 1,000 acres in cultivation.*

[Natural drainage.]

#### CULTIVATION.

Relieving 700 acres, at \$2.....	\$1,400
Shovel plowing and supplying stumps or tops, 1,000 at \$3.....	3,000
Forking banks, burying trash, fork molding, drilling, &c., and drainage....	8,000
Half-banking and replanting 200 acres, at \$7.....	1,400
Weeding and molding, and weeding and trashing.....	9,000
Picking and transplanting plants.....	400
Lining.....	150
Weeding dams, 4,500 roods, twice, at 3 cents per rood.....	270
Repairing, &c., 4,500 rods and aqueducts.....	50
Cleaning sidelines and draining trenches.....	400
Cleaning navigation canals.....	350
Cleaning and digging water paths, &c.....	300
Digging side line, draining trenches, 4,500 roods, at average 8 cents.....	360
Digging navigation canals, one section.....	450
Baling, opening, &c., trenches.....	30
Parapetting and backing earth.....	200
Sea-dams.....	250
Stops-off and leaks.....	400
Cutting bush.....	50
Attending kokers or sluices 52 weeks, at \$6, say.....	310
Forcing drainage.....	100
Water-carriers.....	100
Plantain walk.....	100
Digging grass.....	500
Destroying rats.....	100
Superintendence and commission.....	1,500
<b>Total cultivation.....</b>	<b>29,170</b>

## MANURE AND LIME.

150 tons manure, at \$70.....	\$10,500
400 puns lime, at \$4 .....	1,600
Applying manure, 1,000 acres, at 50 cents .....	500
Applying manure, second application, 200 acres, at 50 cents .....	100
Applying lime, 400 puns, at 24 cents .....	96
Loading and transporting lime .....	14
<b>Total, manure and lime.....</b>	<b>12,810</b>

## SUNDRIES.

Burning earth .....	100
Weeding and repairing roads .....	100
Repairing bridges and approaches .....	50
Repairing cane-punts .....	300
Repairing kokers or sluices .....	50
Repairing cottages and houses .....	200
Cleaning and draining yards .....	100
Making baskets for creoles, &c .....	25
Cutting plantain bush for stables .....	25
Washing dwellings .....	70
<b>Total sundries .....</b>	<b>1,020</b>

## STOCK-MINDERS, TRADESMEN, SERVANTS, ETC.

Stock-minders .....	350
Mule-minders and grooms .....	250
Cutting grass and cane bands .....	500
Shoeing and clipping mules .....	100
Repairing harness, &c .....	100
Domestics .....	800
Watchmen .....	350
Rangers .....	150
Gardeners .....	150
Bateau boys .....	100
<b>Total tradesmen, &amp;c .....</b>	<b>2,850</b>

## MANUFACTURING (FIELD).

Cutting, loading, and transporting canes, baling punts, &c., including superintendence, 1,620 tons at \$4 per ton.....	<u>\$6,480</u>
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## MANUFACTURING (BUILDINGS).

Cane-carrier, 16 hands at 28 cents, superintendence 40 cents per day—\$4.88 = \$614.86, say .....	620
Feeding mill, 2 hands at 48 cents; backing megass, 4 hands at 24 cents .....	250
Chopping canes, 2 hands at 16 cents; clutch, 1 hand at 16 cents .....	60
Mill bed and strainers, 3 hands at 20 cents .....	65
Trucks, 6 hands at 28 cents; packing megass, 2 hands at 24 cents .....	275
Carrying megass, copper walls, 18 hands at 28 cents; 1 boiler, 6 hands at 28 cents; superintendence, 48 cents; rooting and digging megass, 3 hands at 24 cents .....	1,000
Clarifiers, 1 hand at 56 cents; 3 hands at 16 cents .....	140
Subsiders, 1 hand at 48 cents; 1 hand at 16 cents .....	90
Subsiders (sirup), 1 hand at 40 cents .....	50
Pan boilers (head), six months at \$50; 1 at 64 cents, 1 at 48 cents .....	450
Centrifugals, 1,620 tons at 36 cents; water-carrier at 16 cents per day .....	650
Sifting and filling, 1,620 tons at 12 cents .....	200
Copper walls, 10 hands at 40 cents; superintendence, 56 cents, say .....	600
Sulphur box, 8 cents per day .....	10
Filter-presses, 1 hand at 56 cents; 1 hand at 24 cents .....	100
Marking packages, 2 hands at 24 cents .....	60
Mixing, steaming, &c., molasses .....	20
Engine-drivers and boiler-feeders, 1 at 64 cents, 1 at 56 cents, 1 at 48 cents; boys, 36 cents; boiler-feeder, 56 cents .....	350

# SUGAR IN DEMERARA.

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Firemen and attendants, 2 at 64 cents, 2 at 56 cents; attendants, \$1.20.....	\$475
Cleaning boilers and ash-pits, 2 hands at 24 cents; multitubulars, 16 cents; others, say, \$20 .....	90
Cleaning coppers and pans.....	50
Making megass baskets.....	25
<b>Total buildings manufacture.....</b>	<b>5,630</b>

## MANUFACTURING RUM.

700 puncheons at 7½ cents, \$504; megass-carriers, &c., \$96 .....	600
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## TRADESMEN, PORTERS, ETC.

Carpenters .....	300
Coopers .....	500
Coppersmiths.....	100
Engineers and blacksmiths.....	500
Masons .....	100
Painters.....	150
Attendants .....	150
Cartmen.....	120
Porters, &c.....	600
<b>Total tradesmen, &amp;c.....</b>	<b>2,520</b>

## SUNDRIES.

Repairing machinery.....	500
Painting and cleaning machinery.....	150
Repairing sea-punts.....	200
Cleaning and leveling yards.....	100
Cleaning and washing buildings.....	150
Painting buildings.....	100
Breaking bricks, &c.....	100
<b>Total sundries.....</b>	<b>1,300</b>

## SUPPLIES AND ORDINARY EXPENSES.

Materials, repairing cottages.....	250
Materials, repairing sea-punts.....	350
Materials, repairing cane-punts.....	250
Fuel (coal), 1,400 tons at \$6.....	8,400
Fuel, wood .....	500
Packages, sugar hogsheads, barrels, bags, &c.....	3,000
Packages, rum puncheons.....	4,700
Machinery, repairs, &c.....	1,000
General supplies.....	3,000
Sulphuric acid, bloomer, buildings, lime.....	2,500
Harness, &c.....	150
Oats, oil-cake, bran, &c.....	1,000
Telegrams, postage, stationery, court expenses, &c.....	200
Immigration and acreage tax.....	5,000
Insurance .....	1,000
School expenses.....	350
Loss on finding new coolies.....	200
New mules .....	500
Sea defenses.....	500
New cottages .....	2,500
<b>Total supplies and ordinary expenses.....</b>	<b>35,350</b>

## IMPROVEMENTS ACCOUNT.

Ten per cent. on \$100,000 .....	10,000
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## HOSPITAL EXPENSES.

Doctor.....	\$80
Dispensers, at \$30 per month.....	360
Matron, infant nurses, &c.....	125
Feeding convalescents.....	25
Hospital cook at \$1.44 per week.....	75
Washing, hospital, at \$1.20 per week.....	65
Washing hospital clothing at \$1.20 per week.....	65
Graves and coffins.....	40
Cutting plantain bush.....	25
Medicines and supplies.....	1,350
<b>Total hospital expenses.....</b>	<b>2,210</b>
<b>Management, say.....</b>	<b>8,000</b>
<b>Contingencies.....</b>	<b>7,300</b>

## SUMMARY.

Cultivation.....	29,170
Manure and lime.....	12,810
Sundries (field).....	1,020
Stockminders, tradesmen, &c.....	2,850
Manufacturing (field).....	6,480
Manufacturing (buildings).....	5,630
Manufacturing rum.....	600
Tradesmen, porters, &c.....	2,520
Sundries (buildings).....	1,300
Supplies and ordinary expenses.....	35,350
Improvements.....	10,000
Hospital.....	2,210
Management.....	8,000
Contingencies.....	7,300
<b>Total.....</b>	<b>125,240</b>
<b>1,620 tons sugar at \$77.....</b>	<b>124,740</b>
<b>700 puncheons rum at \$35.....</b>	<b>24,500</b>
<b>Total.....</b>	<b>149,240</b>

Showing a profit of \$24,000 at present prices.

[Inclosure in Consul Fyfe's report.]

*Report on the production of sugar and rum in "La Bonne Intention" factory from canes grown by the farmers of Beterver-wagting.*

In the absence of official reports such as are furnished by a minister of agriculture and found in almost every civilized community, the writer feels that any reliable record of actual operations of the nature indicated in the heading of this report may not be without use to those interested in our staple industry, and who wish to see a path made clear to the industrious small farmer.

In laying before the reader the following report of the intromission of this factory with canes made into marketable products from the farmers of Beterver-wagting it is hoped that sound information may be conveyed upon the most vital question of the day, that is, the cost of producing sugar and rum, the cost of growing the canes being entirely free from manufacture.

The following experiment has been conducted on sound commercial principles, leaving a fair profit on the capital invested in machinery and appurtenances, the price paid for cane juice being based on results of former workings, when the tardy way in which canes were brought to the factory enhanced the cost very considerably. Thanks to a complete thorough communication for navigation, and the ready way in which the farmers obeyed my orders, the cost has been materially reduced. Every care has been taken that the figures given should be thoroughly reliable.

The grinding embraced lots of canes varying from an infinitesimal portion of land yielding 700 pounds of canes to 5 acres yielding 100 tons, and of richness in juice from 80° to 110° soleil. The whole area reaped was about 115 acres.

The price agreed upon was \$1.75 per gallon at 100° soleil, so that those farmers producing canes of superior richness to that standard were paid extra in proportion to such higher quality, or less according to inferiority of saccharine matter.

A charge of 6 cents per loaded punt was also arranged, in part to reduce estate's expenditure for transport of canes, but more particularly to insure a regular supply of canes at the mill, and the effect desired was successfully attained.

The mills were worked on the basis of dry double crushing, neither steam nor water being introduced in macerater chamber. Each lot of canes was crushed separately, juice carefully measured in clarifiers under the vigilant eye of the owner, sample filtered and polarized, and the following figures entered in estate's record :

Farmer's name.	Number of punts.	Gallons juice at 180°.	Gallons juice at 80°.	Polarization.		Gallons juice at 100°.	Rate per gallon, cents.	Value of juice.	Less 6 cents each punt.	Amount to be paid.
				Degree.	Pounds per 100 gallons.					
Francis D. Alvego .....	12	4,750	4,608	96.8	158.17	4,460	13 c.	\$78.05	.72	\$77.83
Benjamin Bristol .....	2	755	732	110.0	179.75	805	13 c.	14.08	.12	13.96
Alecia October .....	None.	45	44	100.0	163.57	44	13 c.	77	.12	.77

A copy of these figures was handed to each farmer as a voucher, on the production of which on stated days he was paid amount due him.

The weight of juice extracted from canes, as will be noticed in the following analysis, only averaged 63.4 per cent., which is 4.6 per cent. lower than what is obtained when crushing estate's canes, when maceration is in use and a full feed given to mills. This difference is explained as follows:

- (1) Thin feed of canes when small lots were passing through the rollers.
- (2) High per cent. fiber in canes.

Manufacturing operations were commenced on the morning of Wednesday, 20th January, and extended over a period of 12.5 working days of 14.10 hours each, results being as given in the following analysis.

These, as regards sugar turned out, are not looked upon as better than should at any time be expected with ordinary care and attention, combined with good juice and efficient machinery for the open battery and vacuum pan process. In passing it may be mentioned that distillery results, as will be seen per analysis, have been unusually unsatisfactory, but this is to be attributed to an unfortunate detention which threw a lot of overripe wash on our hands, and consequently entailed considerable loss of rum.

Gallons juice expressed per hour were 800 less than when grinding estate's canes, and this difference was caused by the repeated stoppages between each lot expressed as well as by small quantities passing through the rollers when only one side of cane carrier was being supplied with the raw material (as referred to in paragraph No. 1).

Canes ground for 158.9 hds. of 2,000 pounds net (317,856 pounds) non-chemical sugar, 2,127.66 tons, or 2,000 pounds sugar to 13.4 tons cane; gallons juice at 180° expressed, 288,043; specific gravity, 1.073. Cane engine worked 176 hours and 37 minutes; average expression per hour 1,630 gallons at 180°.

Per cent of juice extracted from canes containing 13.5 per cent. fiber, 1½ tons per square inch hydraulic pressure on accumulator, 224 indicated horse-power exerted, 65.4 per cent.; per cent. crystals obtained from canes, 6.6; pounds crystals per ton of canes, 149.3; gallons per 2,000 pounds sugar at 180° F., 1,512; mean per cent. glucose, .95; average polarization of juice, 97.1°.

Copperwells worked 254 hours and concentrated 288,043 gallons juice at 180° from 9 B' at 162,152 gallons sirup at 13.2 B' = 125,891 gallons water evaporated. Pounds sugar indicated, 443,299; pounds recovered N. C. sugar, 317,856 = 71.77 per cent.

Vacuum pans worked 211 hours and concentrated 162,152 gallons sirup from 13.2 B' at 35,859 gallons massecuite at 50 B' = 126,293 gallons water evaporated. Pounds massecuite struck temp. 150, density 50 B', 518,040 (90 lbs. = 1 cubic foot); pounds crystals obtained 317,856 = 61.3 per cent.

Two Weston's centrifugals worked 117.26 hours and cured 158.9 hogsheads of 2,000 pounds net each = 1.3 hogsheads per hour.

Pounds molasses obtained from massecuite, all of which was converted into rum, result being 3,950 gallons rum, 200,184 pounds = 14,298 gallons or 89.1 per 2,000 pounds, containing 10 pounds sugar per gallon.

Tons coal consumed for manufacturing, including offal crop per 2,000 pounds crystals, .86 ton.

Cost of manufacture of sugar, \$3.75 per 2,000 pounds.

Cost of manufacture of rum \$1.52 per 100 gallons.

Having shown the results of manufacturing I will now proceed to analyze the expenditure incurred, commencing with labor account, which figures are a simple abstract in detail from our weekly pay sheets.

As regard supplies used, those have been given out twice daily at stated hours, under the supervision of a responsible party, and deliveries have been carefully and regularly recorded, value being taken from accounts rendered. Cost of management, &c., under which heading come salaries, immigration, hospital, &c., have been worked out from last year's results in the ratio of average estate's crop, to actual farmers' crop.

Machinery and appurtenances have been taken at half their original cost bearing interest and tear and wear at 10 per cent. per annum, and a small charge has been calculated in same manner for wear and tear of mules, punts, harness, &c.

These various expenditures stand as follows:

#### LABOR.

Transporting canes, including baling punts, stock minders, grass cutters, cutting cane bands, and superintendence.....		\$122 74
Tradesmen:		
Engineers and blacksmiths.....	\$35 60	
Carpenters.....	14 40	
Coopers.....	26 96	
Masons.....	12 76	
		89 72
Manufacturing sugar:		
Attending engines.....	\$27 48	
Docking punts.....	8 36	
Throwing canes.....	62 80	
Chopping canes.....	6 32	
Feeding mills, &c.....	23 52	
Mill beds.....	11 96	
Strainers.....	9 16	
Clarifiers.....	23 56	
Copperwall.....	53 84	
Subsiders.....	19 76	
Vacuum pans.....	42 80	
Filter presses.....	35 64	
Curing sugar.....	42 84	
Sifting and filling.....	21 60	
Firemen.....	25 52	
Megass-carriers.....	67 52	
Backing megass.....	12 72	
Boxmen.....	26 64	
Packing megass.....	8 16	
Cleaning ash-pits.....	14 24	
Feeding boilers.....	16 72	
Sunning megass.....	21 60	
Sewing bags.....	15 84	
		597 60
Manufacturing rum, distillery.....		60 00
Sundries:		
Transporting produce to store.....	\$42 92	
Weighing megass.....	6 56	
Sifting ashes.....	10 92	
Transporting ashes.....	2 52	
Watchmen.....	18 76	
Water-carriers.....	6 24	
Cleaning yards.....	9 16	
Washing dwellings.....	2 32	
Washing buildings.....	15 48	
Washing packages.....	1 92	
Time-keeper.....	13 54	
Cleaning lamps.....	4 22	
		134 56

## RECAPITULATION OF LABOR ACCOUNT.

	Per hogshead.
Transporting canes.....	\$122 74 = .77
Tradesmen.....	80 72 = .56
Manufacturing sugar.....	597 60 = 3.78
Manufacturing rum.....	60 00 = .37
Sundries.....	134 56 = .85
Total.....	1,004 62 = 6.33

MEMO.—Same amount was expended weekly for labor when turning out produce from farmers' canes, as when manufacturing 33 per cent. more sugar, which explains the above rates being rather high.

## SUPPLY ACCOUNT.

138 tons coal, at \$7 each.....	\$966 00
5 casks temper lime.....	50 00
2 gallons acid.....	1 55
50 pounds spirits ammonia.....	1 79
1,419 single sugar-bags.....	212 86
26 rum puncheons.....	156 00
14 rum hogsheads.....	59 50
13 rum barrels.....	42 25
12 gallons engine oil.....	14 40
126½ pounds tallow.....	15 18
26 sheets emery paper.....	52
30 pounds cotton waste.....	3 00
60 fathoms gasket.....	1 46
6 bars soap.....	72
24 pounds red and white lead.....	3 15
1 yard canvas.....	36
10 gallons paint-oil.....	9 00
1 pack sewing-twine.....	3 84
15 pounds rose nails.....	90
3 tubular brushes.....	1 50
	1,543 97

## MANAGEMENT, ETC.

Cane punts, mules, and harness..	80 00
Management.....	468 26
Cottages.....	12 00
Machinery.....	22 71
Insurance.....	56 78
Immigration, acreage tax.....	113 57
Hospital.....	60 39
Shipping.....	200 00
Tear, wear and interest on £17,000 capital invested in machinery and buildings, at 10 per cent. per annum.....	926 00
Interest on \$1,000 invested on aqueduct at 5 per cent.....	50 00
	1,998 71

## SUMMARY.

Dr.	
To labor.....	\$1,004 62
To supplies.....	1,543 97
To management as per above figures.....	1,998 71
	4,547 30
Paid for 273,049 gallons juice, pol. 100°, at 1½ cents per gallon.....	4,778 35
Less transport 863 punts, at 6 cents each.....	51 78
	4,726 57
Total expenditure.....	9,273 87
Cr.	
By 317,856 North Carolina sugar, net, at 3 cents per pound.....	9,535 68
By 3,950 gallons rum, netting at 30 cents.....	1,185 00
	10,720 68
Clearance.....	1,446 81

From the foregoing figures it will be seen that after making all fair charges, a clearance is left of \$1,446 to the proprietors of *La Bonne Intention*.

A small enough sum by the way when all risks are taken into consideration, and one that would have been reduced to half the amount by any higher rate paid for juice. It may be mentioned in passing, what can be well understood, that there was in connection with all the operations an amount of care and attention required in dealing with so many small parcels that could only be realized by those actually engaged in them.

Now that it is seen what the buyers have made by the transaction, let us turn to the sellers' side of the question, and we cannot do better than analyze the working of one lot of canes showing a handsome profit.



Abel Ameo expended as follows on 5 beds canes (= 2½ acres) yielding 49.7 tons canes:

Replanting (trash burnt off).....	\$16 28
Weeding and molding.....	23 64
Shovel-plowing.....	4 32
Digging 2 by 1 drills at low spots.....	5 16
Cleaning out drains.....	3 60
Cutting, carrying out, and loading canes.....	35 48
Superintendence and other contingencies.....	7 16

95 64

#### REALIZED AS UNDER.

6,736 gallons at 180° = 6,534 at 80°, 3 per cent. deducted for expansion = 49.7 tons canes.

Polarization 99.3 = 162.25 pounds per 100 gallons at 100° soleil 6,579

at 1½ cent..... \$115 13  
Less transport 17 punts, at 6 cents = ..... 1 02 = \$114 11

Clearance..... 18 47

By the foregoing statement it has been clearly illustrated that cane juice can be cultivated profitably even at the minimum rate of 1½ cent per gallon, and under unfavorable circumstances as regards seasons.

Take the gallons juice at 100° obtained by Abel Ameo from 2.5 acres, 6,579 = 2,700 from 1 acre at 1½ cent = \$45.25, from which has to be deducted cost of cultivation, &c.

Mr. Charles Cudjoe, one of the largest cane cultivators at *Beterver-wagting*, has furnished the following reliable figures, which will show average rates paid for tillage; opposite to these is given estate's estimated expenditure per acre under corresponding circumstances on estate:

Relieving..... per acre..	\$2 00		\$2 00
Supplying..... do....	3 00		3 50
Draining..... do....	1 90		1 60
Weeding..... do....	4 80		4 80
Plowing (or say drilling)..... do....	3 20		6 50
Thrashing..... do....	6 00		5 20
Cutting canes..... do....	9 00		7 00

30 12..... 30 60  
2,700 juice per acre at 100°, at 1½ cent 47 25, 2,800 at 100° at 1½ cents..... 49 00

Clearance..... 17 13..... 18 40

In comparing this with the work of the agricultural department, where the management, immigration, manure, drainage, and all other charges have to be met, the cost of working an acre of land rises to \$62, or a little over double; against this is a larger yield, which about squares accounts. A large margin of profit here for any contingencies! The foregoing figures demonstrate how profitable cane-farms properly looked after may be. But there comes in the rub. How few devote that necessary care, forethought, personal supervision, physical energy, and profitable tillage to their land which would undoubtedly yield them handsome returns for their expenditure of their own time or money paid to others.

Riding up their section may be witnessed farmers with their wives and children diligently at work. Their land free from weeds, drains thoroughly dug out and clear of water, banks forked in a manner calculated to excite the envy of any planter, and the canes presenting a vigorous and luxuriant appearance.

These are the men who cannot fail in being thoroughly successful.

A little way on the scene changes, and we pass acre after acre the reverse of the above picture. Here may be seen luxuriant crops of weeds, drains swamped with water, and canes conspicuous by their absence. Perhaps in some cases a weak effort has been made at tillage for the first three months after cutting, and then total neglect ensues until the canes arrive at maturity. The owners of these beds are the men who, when they reap their miserably stunted canes, howl at their pecuniary loss, and seek for the cause in every direction excepting the right one.

The subject of cane-farming could be made a most exhaustive one, but I must leave it to an abler writer than myself. All I can hope is that the few remarks and illustrations given in this brief treatise may tend to give some information regarding manufacturing, and encouragement to enlarge the system now fairly at work on "La

*Bonne Intention*," and to disabuse the minds of many who are now laboring under a wrong impression that cane-farming at present rate paid for juice can only mean ruin to the grower.

CHAS. H. STUART.

"LA BONNE INTENTION,"  
15 February, 1886.

"LA BONNE INTENTION" FACTORY EXPERIMENT CRITICISED.

To the Editor of the Royal Gazette :

SIR: Your review of Mr. Stuart's pamphlet on the manufacture of farmers' canes at the "La Bonne Intention" factory is interesting reading as giving chapter and verse for every cent expended; and considering that the factory in question is under the disadvantages of costly railway transport of sugar, coals, and stores, \$28.60 seems a moderate sum for the labor and supplies necessary to manufacture 2,000 pounds sugar of the refining type and 24 gallons of rum.

The price paid for such sugar, 3 cents per pound, equal to 17s. in the London market, it is to be hoped may be realized; 15s. 9d. is the last quotation.

We have had essays written and no end of dead knowledge thrown broadcast, enlightening our poor benighted colonists, of the miserable backward state we are in regarding the extraction of sugar from the sugar cane.

The following figures I compile from the information contained in Mr. Stuart's pamphlet, and with the assistance of analysis made public in *Timehri* by Mr. Alexander, of Tuschen laboratory. Mr. Stuart informs his readers that when grinding Estates' canes, steaming the megass, the extraction rises to 70 per cent. Taking this into account, and that canes are less woody, the following are the results achieved :

*Believer-wagting villagers canes manufactured at "La Bonne Intention" factory.*

100	lbs. canes.	
15.5	woody matter.	
86.5	total juice in cane.	
76.0	of which is homogeneous.	
10.5	thin juice, half richness.	
10.5 =	$\frac{1}{2}$ gallon of first juice lost in megass.	
76	homogeneous.	
65.4	extracted by mills.	
10.6	equal to 1 gallon juice. Add $\frac{1}{2}$ gallon .5 and we have	
1.5	gallons first juice left in megass, worth $1\frac{1}{2}$ cents per gallon, or $2\frac{1}{2}$ cents by 22.4	
	in one ton, and the loss is $50\frac{1}{2}$ cents per ton of canes.	
65.4	lbs. extracted $\div 10.7 =$	6.1 gallons
	$\times 97$ deg. soleil	1.59
	Cane sugar extracted	9.699 per 100
	65.4 $\times .95$ glucose	.621
		10.320
Add loss in megass, $1.50 \times 1.59 =$		2.385
Total sugar in 100 cane		12.705
Thus an extraction of 81 per cent.		

COST.

$273.049 \div 158.9 = 1,725$  gallons per hhd.

At 2 cents per gallon .....	\$34 50 for juice.
Labor and supplies .....	28 60
Paid for juice, labor, &c .....	63 10
Expended on 24 gallons rum .....	40
Against sugar .....	62 73
2,000 lbs., at 3 cents .....	60 00
Against offal crop .....	2 70
Offal crop, 24 gallons, at 30 cents .....	7 20
Net gain per hhd. ....	4 50

3 cents per lb. = \$3.36 per cwt. = 14s., to which add freight and charges, 3s., equals 17s. in London market.

Or 1.09 gallons inferior juice, worth  $1\frac{1}{2}$  cents per gallon, 1<sup>st</sup> cents per 100 lb. canes, or 36 $\frac{1}{2}$  cents per ton of canes gone to fuel.

*"La Bonne Intention" canes own work.*

100 lbs. canes.  
12.5 woody matter.

87.5  
76 homogeneous.

11.5 inferior juice one-half of first. See *Timehri*, vol. iv, page 323.

76 homogeneous.  
70 extracted by mill.

Lbs.  $6 \div 10.7 = .56 + 1.59 = 1.87$  sugar in megass first juice.

Inferior Juice:

lbs.  $11.5 \div 25.75 \div 10.7 = .53 + 1.59 = 1.84$  do. do.

1.71

1.09 gallons juice = 1.71 total loss.

1.5 cents.

1.63 c. per 100 lbs. canes, or 36 $\frac{1}{2}$  c. per ton cane.

Extracted 70  $\div 10.7 = 6.5$  gallons juice.

1.59 lbs. sugar per gallon

70 + .95 glucose 10.33 cane sugar in juice.  
.66 glucose.

10.99 total extracted, or 86.5 per cent.

1.71 in megass.

12.70 total in cane.

It would thus seem that in the case of the farmers, canes 81 per cent. of the sugar in the cane was extracted, and in the case of Estates' canes 86—5 per cent. was recovered.

It would be interesting to have an exactly similar statement on the same reliable basis from a diffusion factory.

So far so good for the factory side of the question. How about the agricultural side?

The statement of labor expended on an acre of land, with reaping the crop, is all fairly stated, but what about the question of rent? Taking the very moderate rental of one dollar per acre per month for well-drained land free of all road or drainage rates, and the apparent gain dwindles down to one-half; raise the rental to two dollars per acre per month, quite a common rental for provision land, and the profit vanishes into thin air. The honest truth is, that the canes grown by the villagers under consideration are stimulate by a similar bounty out of the Demerara tax-payer's pocket, as is the case with bounty-fed beet in Europe. Let our paternal Government extend the bounty to the sugar growers in general, and the cry of sugar not paying will cease; but, as Mr. Stuart would put it, "here comes the rub," what about the unfortunate

TAXPAYER?

## MUSCOVADO SUGAR ESTATES IN ANTIGUA.

REPORT OF CONSUL JACKSON.

### DESCRIPTION OF LAND.

Antigua is possessed of a singular variety of soils in cultivation in sugar-cane. This variety is often found on a single estate, and affects the nature of the canes to that extent that canes from different fields are required sometimes to be mixed at the mill in stated quantities, so that the required proportion can be secured necessary to a successful

"strike" of sugar. Some parts are heavy red clays of a volcanic origin, others are heavy clay subsoils covered by rich black mold, while others have been immersed for long periods, abundant evidence being shown by extensive beds of marl, petrified sea fauna.

The surface of the land is undulating and sometimes mountainous.

#### LAND TENURE.

The manner of holding land is by deed and mortgage—a system in its workings similar to that in vogue in the United States.

There is also a system of lien, called the "consignee's lien," that is much practiced here, but is expected soon to be abolished. The *modus operandi* is as follows: A merchant advances supplies for a sugar estate, and in default of a settlement, quite at the option of the merchant, the estate can be thrown into a court called the "encumbered estates court," and sold to the highest bidder, the court having the right to furnish the purchaser a clear title to the property.

#### RENTS.

The rent paid for a sugar estate in good working condition is about £1 per acre.

#### GENERAL CONDITIONS OF LABOR.

Labor has no recognized organization whatever, and is of that tractable disposition as to be influenced by the depression of sugar, accepting the lowest living rates of payment almost without a murmur.

Last year an effort was made by a combination of a few influential planters to do away with the weekly allowance of molasses, but the movement augured such evil results through dissatisfaction of labor that it was very soon abandoned. While the labor is poor and unsatisfactory at best, it is as good as could be expected from the low wages received.

#### TOOLS.

These consist of the common plantation hoe, a heavy, clumsy tool, with a home-made handle obtained from a small tree; the ordinary iron-beam English plow, both single and double mold-board; a few diamond-tooth cultivators; and the cane-bill, a tool used for cutting the cane, and resembling a butcher's cleaver. Every estate has a machine or tool for cutting cane-tops for feeding purposes.

#### MACHINERY.

A number of steam plows are in use, and they are very effective workers. A plant consisting of two traction engines of about four horse-power and gang plows to match costs about £2,000. They are of old pattern and Glasgow make.

The canes are crushed by both steam and windmill power. The former power is the favorite, although more expensive than the latter. The engines and crushers are of common description, and generally imported from Glasgow. The clarifiers are made of iron, and of 500 gallons capacity, and are also made in Glasgow. The sugar pans, or kettles, are mostly of iron, set to heat by the burning of megass or wood. Coal is little used, because it is deficient in far-reaching flame power.

## LABOR WAGES.

The wages paid to laborers are lower since the great depression in sugar. A man in common field labor can only command from 20 to 24 cents per diem, while women laborers can be obtained at a much smaller figure. Managers of estates are paid from \$500 to \$1,000 per annum, with extras of a horse, a servant, and house rent free. Overseers are paid \$200 to \$500 per annum, a servant provided, and house rent free.

The list here given is a fair average of wages paid per day to laborers on a sugar estate:

	Cents.
Women, as weeders.....	12
Boys, as weeders.....	10
Girls, as weeders.....	10
Men, as cane-cutters.....	36
Women, as tiers.....	24
Men, as carters.....	24
Men, as loaders.....	24
Men, as engine-drivers.....	48
Boys, as assistant engine-drivers.....	08
Men, as pan-boilers.....	32
Men, as stokers.....	48
Men, as mill-feeders.....	48

Allowances, one quart of molasses per week and house rent free. Services of physician paid by the estate.

Wages are invariably paid every Saturday night. Mondays are holidays, thus leaving only five working days per each week. Generally the hours of labor begin at 6 a. m. and end at 4 p. m., with one hour intermission only, from 10 to 11 a. m.

## SUBSISTENCE OF LABORERS.

During the season of cane-reaping half the subsistence of laborers is obtained from chewing the canes. The quantities and cost of subsistence for one week for each woman laborer are about as follows, viz:

	Cents.
Bread, 7 loaves.....	14
Vegetables, 7 pounds.....	7
Rice, 2 pounds.....	8
Fish (salt cod) 1 pound.....	8
Pork (salt) $\frac{1}{2}$ pound.....	4
Sundries.....	4
Molasses, 1 quart.....	free
Total per week.....	45

A man would require an additional allowance of about 25 per cent.

## LABORERS' CLOTHING.

Men's garments consist of a shirt, undershirt, trousers, and hat. Sometimes shoes are worn in the reaping season. The quantities and cost of clothing per annum are about as follows:

5 shirts, gingham, at 60 cents.....	\$3 00
5 pairs of pants, denim or drill, at 60 cents.....	3 00
2 undershirts, cotton flannel, at 80 cents.....	1 60
1 pair of shoes.....	1 68
2 straw hats, at 12 cents.....	24
Total.....	9 52

Women's garments consist of a print dress, a chemise, and bandana handkerchief. Quantities and cost are as follows:

4 print dresses, at 75 cents.....	3 00
3 chemises, cotton, at 40 cents.....	1 20
2 bandanas, at 32 cents.....	64
Total.....	4 84

A calculation can scarcely be made of the annual expense of the better class of garments worn for church-going purposes, &c., because such garments are made to last for a number of years.

#### DWELLING PLACES.

The dwellings inhabited by the laborers on the estates are made of stone, with thatched roofs. They are low and very substantial. These dwellings are rent free to regular laborers.

#### COST OF LABOR TO TON OF SUGAR.

I have been able to obtain the cost of labor in an average season, in the production of a ton of sugar (muscovado) ready for market, and find that it is as much as \$29.50 per ton.

Owing to the mixed system of job work and day pay I find it about impossible to estimate the rate paid per day and the number of days employed in the production of a ton of sugar.

#### TAXES.

There is an export tax of \$1.20 per hogshead (average one ton) on all sugars exported from Antigua, and a land tax of 24 cents per acre on each acre in cultivation. The import tax on muscovado sugar is about 7 per cent. ad valorem.

#### EXPORT OF SUGAR.

Sugar is exported principally to the United States and Great Britain, the former importing fully 75 per cent. of the crop.

Transportation is effected by steam and sail vessels, the former carrying about one third of the export only. Steam vessels charge \$5 per ton to the United States, and sail vessels \$3. The freights to London are about double the freights to New York.

CHESTER E. JACKSON,

UNITED STATES CONSULATE,  
Antigua, April 28, 1886.

Consul.

### AGRICULTURE IN GUADELOUPE.

#### REPORT OF CONSUL BARTLETT.

There are no mines in this colony, nor manufactories, with the exception of the sugar manufactories and rum distilleries, sugar and rum being the principal productions of the colony. Therefore I can only report on the products of agriculture.

#### PRODUCTS OF AGRICULTURE.

*Description of land.*—The island of Guadeloupe is divided into two parts by a natural canal of about 5 miles in length, called River Sale.

The western side of this canal is what is called Guadeloupe proper, and is of volcanic nature, and the land that is cultivated is very fertile and produces in abundance when properly tilled.

The eastern side of this canal is what is known as Grand Terre and is of madraperos formation, and produces well. The canes of this section, though of smaller size than those of Guadeloupe proper, are richer in saccharine, but are more costly in cultivation than those grown in the western portion, on account of the rocky nature of the land.

The land is generally owned by the planters and is not rented except as follows: Quite a large number of the planters have contracted with the usines, or the central sugar manufactories, for the space of 20 years on the following terms: They guarantee to deliver all their canes to the usines; these on their part, take all the canes the plantations can produce, and allow them the value of 5 kilograms of sugar for every 100 kilograms of canes, the price to be determined every 15 days by the chamber of commerce, and is based on what is called "bonne 4me," which is equal to muscovado sugar, testing about 86 degrees by the polariscope test.

#### GENERAL CONDITIONS OF LABOR.

The labor on the plantations are mostly coolies, of which there are about 35,000 in the colony; these are brought from Calcutta or Pondichery. They come out under a contract for five years; their passage out and back is paid by the administration and they are to receive for salary per month: The men 12.50 francs, the women 10 francs, the boys of ten years and over 5.25 francs, and the girls of the same age 5 francs, with lodging, board, medical attendance, and clothing.

Their clothing consists of two suits of coarse drilling per annum.

Their food per day consists of 85 centiliters of rice or farine manioc, 214 grams of salt fish, or 200 grams of fresh or salt meat when substituted, and 20 grams of salt.

#### DESCRIPTION OF TOOLS AND MACHINERY USED.

The tools used are the common cast-iron plow, the pick, the large heavy hoe, the spade, shovel, horse cultivator and the cutlass, the common two-wheel carts to cart canes. Four-wheel carts are not used.

The plantations where muscovado sugar is manufactured use, some the common windmill, with rollers; others have water-power, and others steam.

The windmills and steam are used on Grand Terre, where there is no water-course; but on Guadeloupe proper, where water is abundant, it is utilized to drive the mills. They use iron rollers to press the canes, and the copper or iron boilers to boil the juice and make the sugar.

Now the usines, or central sugar factories, of which there are twenty-one in the colony, are all driven by steam, with the exception of two, which are driven by water-power. They use the turbines and all the modern improvements used by refineries at home or elsewhere to make white sugar, and their first jet, or first quality of sugar, is very white and pure, testing from 96 to 98 degrees of the polariscope test, nearly the whole of which is shipped to Europe.

There are 121 rum distilleries in the colony, and they distill about 5,000,000 liters of rum per annum. The machinery is mostly of modern improvement. Most of the machinery for sugar and distilleries is imported from France.

RATES OF WAGES OF LABOREERS — MODE OF PAYMENT — HOURS OF LABOR.

The wages of coolies have already been given. For creole labor on plantations it is 1.2 francs for men, 1 franc for women, and they find themselves. In the sugar-mills and distilleries, during the crop season, they pay from 3 to 4 francs per day. They are paid every fifteen days. Nine hours and a half constitute a day's work.

SUBSISTENCE OF LABOREERS.

For coolies, as previously mentioned. The principal food of the creole laborers consists of farine manioc (cassada), bread-fruit, plantain, bananas, taniers, sweet potatoes, yams of all descriptions, and all the tropical fruits, which they raise on their little plot of ground on holidays and when out of work. As for clothing, some go half naked, some use old bags, and others dress up comfortably when they can get money to do so.

In the cities and villages they can rent a room for 8 to 20 francs per month; in the country they build themselves small huts with thatched roofs, not fearing the inclemency of the weather, as we would in a northern climate.

CUSTOMARY MODE OF PREPARING AGRICULTURAL PRODUCTS FOR THE MARKET.

The muscovado sugar is put into hogsheads and barrels and landed on the wharves of Pointe à Pitre, which is the principal port, and there it is sold.

The usine or centrifugal sugars are put in hogsheads, bags, and barrels, and kept in the store-houses of the usines until shipped.

LOCAL OR NATIONAL TAXES.

There is an export duty of 3 francs per 100 kilograms on all sugars exported; on rum there is a consumption duty of 1.20 francs per liter of pure alcohol, besides the license on the still; if exported, the duty is nominal.

This export duty on sugar is paid by the planter, which covers all his taxes.

The muscovado sugar is mostly shipped to the United States. The usine or centrifugal sugar and rum are nearly all shipped to Europe. The shipments to the United States are made all in sailing vessels; those to Europe by both steamers and sailing vessels.

The general rate of freights to the United States is \$3 per hogshead; to France from 45 to 50 francs per ton (about \$9 to \$10 per ton of 1,000 kilograms, or 2,240 pounds English or avoirdupois).

Besides the above there are exported about 600,000 kilograms of coffee, 1,500,000 kilograms of logwood, 400,000 kilograms of anatto, and 200,000 kilograms of cocoa, and small quantities of spices, vanilla, &c., which are all sent to France.

GENERAL OBSERVATIONS.

Farine manioc (cassada) is very extensively used by all classes as an article of food, it being very nutritious. I can give no statistics of the quantity made in this colony, but from my observation on what is daily landed upon the quays from small boats and droghers coming from



the different communes of the colony, the consumption must be very large. It is generally sold at from 50 to 60 centimes a pot (a measure containing 2 liters), or 4 to 5 cents a pound.

The cost of 100 kilograms of muscovado sugar laid down upon the quay in hogsheads is from 34 to 36 francs, or, in other words, \$3 per 100 pounds avoirdupois. This is based upon the best information I can obtain from the planters. Some plantations will cost a little more, some a little less, to manufacture the sugar.

The cost of usine sugar is governed by the price of muscovado sugar, they paying 6 per cent. for the canes, whereas they obtain 10 to 12 per cent. from the same quantity of canes. When muscovado sugar testing 86 degrees is worth 36 francs per 100 kilograms the first jet usine sugar is worth 55 francs per 100 kilograms, and that must be about the cost of the first-jet usine sugar.

CHARLES BARTLETT,  
*Consul.*

UNITED STATES CONSULATE.  
*Guadeloupe, September 17, 1885.*

## EXPORTS OF SUGAR FROM CUBA.

REPORT OF CONSUL-GENERAL WILLIAMS.

I inclose tables showing the exports of sugar-cane products shipped from the various ports of this island to the United States and to other countries during the first quarter of the present year, with the following exhibit of the percentage sent to each of these two destinations, viz:

Port from whence shipped.	To the United States.	To other countries.
	<i>Per cent.</i>	<i>Per cent.</i>
Havana .....	70½	29½
Matanzas .....	99½	½
Cardenas .....	100	
Sagua la Grande .....	100	
Calbarien .....	100	
Nuevitas .....	99	1
Gibara .....	100	
Guantanamo .....	100	
Santiago de Cuba .....	82	18
Manzanillo .....	100	
Zaza .....	100	
Trinidad .....	100	
Cienfuegos .....	95½	4½

In forming these tables I have followed the usage here, and adopted the hogshead of sugar of 1,500 pounds net weight as the unit of weight, reducing all other kinds of packages thereto, according to the scales below:

*Scale for sugar.*—1 hogshead sugar = 1,500 pounds, net weight; 1 bag sugar = 300 pounds, net weight; 5 bags sugar = 1,500 pounds = 1 hogshead; 1 box sugar = 400, net weight; 3½ boxes sugar = 1,500 pounds = 1 hogshead.

*Scale for molasses.*—140 gallons = 1 shipping hogshead; 70 gallons = 1 shipping tierce; 35 gallons = 1 shipping barrel; 1 gallon = 10 pounds, and 1 gallon =  $\frac{70}{10}$  parts of sugar; 7 pounds sugar = 1 gallon of molasses.

Therefore, 1 hogshead molasses =  $140 \times 10 \times 70 = 980$  pounds of sugar.

*Scale for rum.*—1 pipe =  $1\frac{1}{4}$  hogsheads molasses.

The accompanying general statement, wherein are recapitulated all the tables, shows that the products of the sugar-cane crop of Cuba exported during the quarter under consideration have found their consuming markets abroad in the proportion of 93.55 per cent. in the United States and only 6.45 per cent. in other countries.

No sugar-cane products have been exported from the important port of Baracoa during the first quarter, the shipments from there having been comprised exclusively of fruits, all of which, or say 100 per cent., went to the United States, and nothing to other countries, as shown by the inclosed table of the exports from Baracoa during the first quarter of the present year.

RAMON O. WILLIAMS,  
*Consul-General.*

UNITED STATES CONSULATE-GENERAL,  
*Havana, June 25, 1886.*

*Exports during the quarter ending March 31, 1886.*

[Hogshead of sugar of 1,500 pounds weight, net, as unit of measure.]

Ports of shipment.	To the United States.		To other countries.	
	Sugar.	Per cent.	Sugar.	Per cent.
	<i>Hogsheads.</i>		<i>Hogsheads.</i>	
Havana .....	40,714	.70 $\frac{1}{2}$	17,023	.29 $\frac{1}{2}$
Matanzas .....	60,859	.99 $\frac{1}{2}$	70	.00 $\frac{1}{2}$
Cardenas .....	71,207	100		
Sagua la Grande .....	31,373	100		
Caibarien .....	16,344	100		
Nuevitas .....	2,727	.99	23	.01
Gibara .....	1,844	100		
Guantanamo .....	12,271	100		
Santiago de Cuba .....	4,311	.82	943	.18
Manzanillo .....	3,917	100		
Zaza .....	700	100		
Trinidad .....	2,504	100		
Cienfuegos .....	42,427	.95 $\frac{1}{2}$	1,994	.04 $\frac{1}{2}$
Total .....	291,198		20,053	
				Per cent.
To the United States .....				93.55
To other countries .....				6.45
Total .....				100.00

## SUGAR EXPORTS FROM CUBA.

*Recapitulation of statements of exports of the sugar-cane products of the island of Cuba to the United States and to other countries, during the quarter ended March 31, 1886.*

Ports of shipment.	To the United States.							
	Sugar.				Molasses.			
	Hhds.	Boxes.	Tierces.	Bags.	Hhds.	Tierces.	Barrels.	Pipes.
Havana .....	4, 482	74	.....	148, 664	10, 530	.....	.....	.....
Matanzas .....	10, 552	.....	.....	170, 813	23, 543	2, 302	73	.....
Cardenas .....	37, 556	.....	.....	46, 094	35, 483	3, 829	.....	.....
Sagua la Grande .....	10, 535	.....	1	44, 327	8, 139	737	.....	.....
Calbarien .....	4, 672	.....	.....	54, 902	446	.....	.....	.....
Nuevitas .....	121	.....	.....	12, 737	90	.....	.....	.....
Gibara .....	307	.....	.....	7, 141	167	.....	.....	.....
Santiago de Cuba .....	73	.....	8	21, 093	.....	.....	.....	.....
Guantanamo .....	635	.....	.....	58, 179	.....	.....	.....	.....
Manzanillo .....	.....	.....	.....	15, 399	1, 271	7	30	.....
Trinidad .....	1, 750	.....	150	2, 299	347	52	.....	.....
Cienfuegos .....	15, 223	.....	456	125, 988	2, 492	300	164	185
Zaza .....	.....	.....	.....	3, 500	.....	.....	.....	.....
Baracoa* .....	.....	.....	.....	.....	.....	.....	.....	.....
Total .....	91, 906	74	615	711, 136	82, 508	7, 227	267	185

Ports of shipment.	To the United States.				To other countries.							
	Melado.			Rum.	Sugar.			Molasses.			Rum.	
	Hhds.	Tierces.	Barrels.	Barrels.	Hhds.	Bags.	Boxes.	Hhds.	Tierces.	Barrels.	Pipes.	
Havana .....	.....	.....	.....	.....	1, 817	41, 906	12, 061	109	.....	.....	.....	3, 611
Matanzas .....	.....	.....	.....	.....	.....	851	1	.....	.....	.....	.....	.....
Cardenas .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sagua la Grande .....	626	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calbarien .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nuevitas .....	.....	.....	.....	.....	6	27	.....	17	.....	.....	.....	.....
Gibara .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santiago de Cuba .....	.....	.....	.....	50	.....	1, 660	.....	.....	.....	.....	.....	772
Guantanamo .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manzanillo .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trinidad .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cienfuegos .....	.....	.....	.....	.....	14	6, 026	7	671	196	111	.....	256
Zaza .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Baracoa* .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total .....	626	20	.....	50	1, 838	49, 970	12, 069	797	196	111	.....	4, 639

\* No exports of sugar-cane products.

To the United States .....	Per cent.
To other countries .....	93. 65
Total .....	6. 45
Total .....	100

## SUGAR CROP OF CUBA, 1886-'87.

[From the Pais, Havana, July 8, 1886.\*]

The Situation, of Sagua, says, that upon information obtained from intelligent and experienced planters the sugar crop of 1886-'87 in that district will show a diminution of not less than a third part compared with the crop just gathered of 1885-'86.

This will be due not only to there not having remained over any fields of standing cane as last year, but also to the drought that has lasted for forty-five days, stopping the growth of the ratoonns and killing the spring plantings.

There is besides another cause why the coming crop must diminish. This is the abandonment in which a great number of sugar plantations are left on account of the owners being without cash or credit to pay for the weeding and cultivation of their fields. On the other hand, the perspective of prices and the increased exactions imposed by the Government this year have discouraged even the richest and the most enterprising of the planters, for which reason the autumn plantings were relatively so small, whilst those of spring amount almost to nothing.

## SUGAR EXPORTS FROM CARDENAS TO THE UNITED STATES.

## REPORT OF COMMERCIAL AGENT CHURCHILL.

*Statement of shipments of sugars, molasses, honey, woods, and asphaltum from Cardenas to the United States during the two first quarters of the years 1885-'86.*

Period.	Sugar.		Molasses.		Honey.	Asphaltum.	Woods.
	Hhds.	Bags.	Hhds.	Tierces.	F.	Hhds.	Logs.
To March 31, 1885.....	45,790	13,220	27,827	8,112	985	61	1,331
To June 30, 1885.....	57,771	18,522	36,691	4,458	46	43	432
Stocks, June 30, 1885.....	25,550	20,273	1,500				1,000
	139,111	47,015	66,018	7,670	1,011	104	2,763
	9,403		3,835				
	148,514 or 111,385 tons.		69,851 or 55,125 tons.				

## Corresponding statement for 1886.

To March 31.....	38,949	47,097	37,458	4,056	75		100
To June 30.....	54,117	44,298	53,520	5,970	441	50	282
Stocks, June 30.....	32,840	88,229	2,500		100	150	1,200
	125,906	179,624	93,478	10,026	541	200	1,582
	35,923		5,013				
	161,829 or 125,486 tons.		98,491 or 76,498 tons.				

As all the sugar estates have finished their crops and sent them to market, the above statements very nearly show the products for the years 1885-'86, to which must be added 3,000 hogsheads used by the Cardenas refinery, and 5,000 sent from this port by coasters to Havana. So that this port has really received 174,829 hogsheads, or 135,886 tons. Last year's total product of sugars on the island was 621,771 tons, and

\* Transmitted by Consul-General Williams.

allowing 10 per cent. increase of crop, as it is calculated for this year, would give a total of 653,948 tons, or about one-fifth of the whole crop passing through Cardenas; and as compared with other ports on the island, in their shipments of the above-named articles, it appears by the "declared exports," as published for 1845, that the total value of the shipments from Cardenas to the United States were \$8,884,377, exceeding Havana by 41 per cent.; exceeding Matanzas by 14 per cent.; exceeding Sagua la Grande, Remedios, Nuevitas, and Baracoa 20 per cent.; exceeding all of the south side of the island ports of Cienfuegos, Trinidad, Zaza, St. Jago, and Guantanamo 18 per cent.

This large business is mainly brought to Cardenas by the Cardenas and Jucaro Railroads, whose lines extend into the sugar-producing districts of Cienfuegos, Villa Clara, and Sagua, and compete with the Matanzas and Havana lines.

In the matter of imports, the United States send everything needed for the working off the crops, and all kinds of food, except jerked beef and most of the rice.

JAMES M. CHURCHILL,  
*Commercial Agent.*

UNITED STATES COMMERCIAL AGENCY,  
Cardenas, , 1886.

## SUGAR BOUNTIES IN RUSSIA.

REPORT OF CONSUL HEENAN, OF ODESSA.

### OVERPRODUCTION.

I submit the few statements this dispatch contains on the subject of sugar in Russia with the intention of calling the attention of the Department in the first place to the enormous quantity produced, and the consequent effect on the price of the article, and in the second place to the action of the Russian Government in coming to the relief of the sugar manufacturers and the effect of the same on the sugar interests generally.

Russia did not export sugar until last year, except in very small quantities, and then only to neighboring countries, the home consumption heretofore absorbing all that could be raised, the quantity required being between 720,000,000 and 792,000,000 pounds each year.

The producers, who are also the manufacturers of sugar, for years past have been realizing enormous profits from the protection afforded them by the Government in placing a high tariff on all foreign sugar. These profits, according to good authority, have reached as high a figure as 50 per cent., besides increasing the value of the lands from 150 to 200 per cent., owing to the cultivation of the beet.

### SUGAR BOUNTIES.

In consequence of these high profits there was an overproduction of sugar. This was foreseen early in 1885, a surplus of between 288,000,000 and 360,000,000 pounds being the result. This surplus caused prices to drop to the low price of 5 cents per pound. The wealthy owners at

once appealed to the Government for aid to keep up, not their industries, because it was shown that even at this low figure a moderate profit would result, but to keep up their large profits.

The Government yielded to this demand, and gave a premium or bounty of 1 ruble per pood, or 50 cents on every 36 pounds of sugar exported, until 72,000,000 pounds should be reached. As this quantity was not sufficient to relieve the market of its surplus, free permit was given for sugar exported with a premium or bounty of 40 cents on every 36 pounds exported until May 1, 1886 (Russian calendar).

The quantity exported thus far (April 8) is about 216,000,000 pounds, so that from 72,000,000 to 144,000,000 pounds remain to be disposed of.

The greater part of the sugar exported was sent to England. It was not sold, but was consigned, and still remains unsold on the English market, which is depressed by the supply pouring from all countries.

The bounty allowed by the Russian Government was not sufficient to induce the owners of the surplus sugar here to part with their stock. They have therefore applied to the Government for an increase of this bounty, with the additional request that the bounty be paid in the future on all sugar exported, and that the manufacturers be not asked to return the bounty already paid.

The Government levies a tax of sixty-five kopecks on every pood of manufactured sugar, or thirty-two and one-half cents on thirty-six pounds.

The bounty allowed was to be refunded by increased taxation (internal revenue) on future crops.

This additional demand on the part of the sugar interest was received with great discontent and opposition by the agricultural classes generally, and the question was asked, "Why should not the Government give a bounty to other products which were exported, wheat, for instance, as well as sugar, which had a long run of prosperity? The other interests of the country objected to paying tribute to increase the profits of the wealthy sugar manufacturers.

The Russian minister of finance refused to grant the request made, and declined to help in any other way toward a reduction of this product, declaring that those people who unreasonably increase production must bear the consequences of their own action.

The minister further replied that the difficult situation of the sugar industry produced by the overproduction during the periods of 1884-'85-'86 has attracted the attention of the Government. By two resolutions of the committee of ministers there was given to the manufacturers of the whole Empire an export premium of first 1 ruble, and afterwards 80 kopecks per pood, and through this measure undoubtedly a collapse of prices was prevented.

However, on the part of the manufacturers, different petitions and appeals have been made, and are still being presented, regarding which the minister of finance sees himself induced to give some explanation.

Some of the applications demand partly an increase and partly a non-refundable premium; others a limitation of production by fixing the amount produced by each manufactory, and extra taxation of the amount exceeded; others again consider all measures superfluous, and expect an amelioration and improvement through the cheapening of production or through the stoppage of work of those factories which are not able to compete.

The minister of finance, therefore, considers it necessary to observe that an increase or a non-refundable export premium is out of the

question, and that the premium paid up to now had the purpose to relieve the market of its surplus production for the period of 1885-86, and must cease in the future, it not being the intention to in any way encourage overproduction.

A continuation of this premium would be purposeless, as the rest of the European states—Germany, France, and Austria—have gone so far in the way of premiums as to make it impossible to compete with them.

The minister of finance intends to protect home production only so far as to supply the home consumption, and not to supply foreign consumers with cheap sugar at the expense of the Russian Government and the Russian people; consequently the minister of finance considers it necessary to inform the sugar interest in advance that the produce of the next season can count upon no premium for export.

Regarding the question of limiting the production, the minister of finance considers it necessary to remark that before all it is the duty of the manufacturers themselves to reduce the production sufficiently for the demand, and that the question is not a matter for Government interference; all consequences of immoderate production must fall on unreasoning producers.

The minister of finance therefore considers it necessary—

1st. To provide for an outlet to some oriental market.

2d. To prevent speculative rise of prices through a lowering of import duties.

3d. To reconsider the arrangement for repayment of premiums.

Regarding the first two points a resolution may be arrived at within a short time, and any further communications on the subject will be useless; but regarding the last point the minister of finance solicits the opinion of parties interested up to May 15, 1886.

The refunding of the premium may be left as heretofore, viz., according to the quantity manufactured, or it may be so allotted as to bring it in proportion to the increased production of certain manufactories.

Petitions only will be received and considered on this latter point; all others which demand favors and assistance, such as abandoning the premium paid on the part of the Government, and also petitions asking for an extension of time on internal-revenue taxes, must not count on favorable consideration.

The grade of this sugar is from 99½ to 100 per cent. polarization, all being made from the beets, no cane being used or grown.

The method of refining is not up to the latest improved methods, else the yield per pound of beet would be much larger.

Russia is a high-protective-tariff nation, and strongly in favor of and jealously anxious to protect home industries, yet is not willing that the majority of her citizens should suffer in order that a favored few might prosper, a sentiment that will be favorably received in every farming community on this as well as on the other side of the Atlantic.

I venture to hope that the matter contained in this communication may pardon its length.

THOMAS E. HEENAN,  
*Consul.*

CONSULATE OF THE UNITED STATES,  
*Odessa, Russia, April 8, 1886.*

**BEET SUGAR IN DENMARK.***REPORT OF CONSUL RYDER, OF COPENHAGEN.*

The rapid and very great development which has taken place in the manufacture of beet sugar in this country in the last years, namely, from 4,000,000 of pounds in 1880, to over 20,000,000 pounds in 1884, has been a source of material benefit in these times of unusually low grain prices to the agricultural classes, more especially to the agriculturists located in the vicinity of the districts where the large sugar refineries have been erected. These parties have been anxiously seeking every opportunity for bringing an increased area of their lands under culture of these roots; but unfortunately, with the simultaneous depression which has been felt in the sugar markets, due in great measure to the large exports from Germany and France under the protective influence of the sugar-export bounties, the owners of the large sugar refineries in this country have found themselves compelled to refuse to enter into fresh agreements for any increased areas, upon conditions of similar nature to those contained in still running contracts. Taking further into consideration the present unfavorable aspect of the world's sugar markets, they have decided to limit all new contracts to the term of one year's duration, as likewise to call for a reduction of about 2½ cents per hundred-weight of roots on the prices hitherto paid. The fresh agreements thus determined upon by the owners of the refineries, have produced a feeling of sad disappointment amongst a large number of the older contractors. They had commenced operations upon a small scale, with the view of first acquiring full experience in the cultivation of this product, but with the full expectation that if the results responded favorably to their hopes, that they would then be enabled to place under the same culture such increase of area as might be fairly counted upon for a reasonable supply to the sugar works.

Again, many husbandmen, who with still greater caution had not ventured to embark at once in the same undertaking, but had preferred first to watch the results obtained by their neighbors before they also took part in the culture, now that the yearly returns have so plainly demonstrated the great advantages that have been derived by their neighbors from the culture of sugar beets during the present low prices of grain, are also anxiously looking forward to a greater development in this branch of agriculture, in which they may likewise be enabled to participate.

With the somewhat firmer tone of the sugar markets during the latter part of the expired year, a more hopeful feeling seemed to spring up among the cultivators, and it was generally felt by them that the opportunity should not be allowed to slip away without some attempt being made to obtain terms of such favorable nature as would justify them in bringing a greater extent of area under culture of these roots; and they more especially were of the opinion that such prospects might be more easily realized when they could at the same time offer to the different newly-established refineries at Nakskov Stege and at Assens such a collective extent of area that the manufacturers could obtain full security for the carrying on of their works without interruption throughout the whole working campaign. At a numerously-attended



meeting lately held in the principal sugar-beet district it was unanimously resolved to send a deputation from the growers, who should without delay seek to enter into negotiation with the proprietors of the sugar refineries with the view of establishing a basis of agreement leading to an increased area being brought under culture of these beets upon terms of mutual advantage to the refiners as well as to growers.

#### MAKING PRICES.

It was suggested at this meeting that as a starting-point in these negotiations it would be desirable first and foremost to seek to establish a fixed connection between the prices of sugar and the prices of the sugar beets, in such manner that with a stipulated price of sugar according to the quotations of the London market the growers should receive the hitherto normal prices paid for the roots (21.44 cents per hundred-weight of roots without regard to their saccharine contents, or else 20.10 cents—an extra payment of 1.34 cents percentage of saccharine in the roots, over and above 12 per cent.; as also the respective prices of 22.25 and 23.30 cents after the 15th November and 15th December); and with a decline in the price of sugar, that a fixed scale should be regulated for a corresponding reduction in the price to be paid for the roots; or again, that a somewhat lower price for the roots (say of 1.34 cents per hundred-weight) might be fixed, the same to be maintained without regard to any corresponding fluctuations in the sugar market.

It would appear to have been the general feeling of all who attended this meeting that it could not be too forcibly impressed upon the minds of those who might be delegated to take part in these negotiations, that no satisfactory and lasting arrangement could be looked for unless the interest and welfare of the refineries were taken into consideration equally as well as those of the growers.

Meetings have been subsequently held in the less important sugar-beet districts, where it was also unanimously resolved to send delegates who should co-operate with the deputation from the first-named district.

Although the yield of sugar beets per area of land at Assens was stated to have been considerably less than that obtained on the islands of Moën and Loelard it was nevertheless fully acknowledged at the meeting held at that place that a greater development of the culture of these roots was a matter of great pecuniary importance under the present agricultural depression, and that it was therefore most desirable that all endeavors should be made towards bringing an increased areal under culture of these roots. The parties so deeply interested in the prosperity and further development of this branch of industry would appear to have taken very sensible and practical steps towards arriving at an amicable arrangement, and it is to be hoped that with a mutual display of good will on the part of refiners as well as growers, that such satisfactory basis may be agreed upon as may allow of an increased areal to be brought under this culture, and that all parties concerned may find themselves in a position to tide over this seemingly interminable period of trade depression.

HENRY B. RYDER,  
*Consul.*

UNITED STATES CONSULATE,  
*Copenhagen, March 25, 1886.*

**CHINA-GRASS OR RHEA-RAMIE FIBER.\****REPORT OF CONSUL WILLIAMS, OF ROUEN.*

It has been well said that the name of the China-grass of commerce is inappropriate, as the plant, which might appear at first glance like grass, is far removed from the nature of grass. The names "ramie" and "white Chinese nettle" have been given to the white variety, which yields the China-grass of commerce. The name "rhea" has been indiscriminately applied to all of the varieties, and the suggestion seems to be proper that this name "rhea" should be used to express the fiber derived from any of the nettles, in the same way that we say "jute" or "flax."

The China-grass of commerce is simply the fiber, still containing 20 to 30 per cent. of natural gum, from which it derives its stiffness, and this fiber is peeled principally by hand labor.

There are two or at the most three varieties of this plant which have been successfully cultivated and tested in Europe. They grow best in tropical climates, attaining the height of  $3\frac{1}{2}$  to  $5\frac{1}{2}$  feet, and even more, and although it is asserted that five or six crops under favorable circumstances may be annually obtained, it would be safer to count on three. One variety of this plant has been grown in England. Although it did not attain a great height or admit of many annual cuttings, the fiber produced was of relative value. The three kinds have been grown side by side in Italy, and yielded the same results.

The plant is perennial, very prolific, and propagates from cuttings of the stem or bits of the root; in other words, the cultivation offers no difficulty.

Climate, soil, and atmospheric influences being congenial, the culture appears to be simple, except that artificial watering of the plant is required in the hot and dry climate and loose soil of Southern Europe, and seems indispensable except in the few instances where the typical soil and climate can be found. If grown on marshy or wet land the roots are subject to decay.

The mode of cultivating this plant has been so thoroughly treated in consular reports and elsewhere that further reference to it is unnecessary.

**STRIPPING RAMIE.**

The great obstacle to the more general use of this valuable textile still continues to be in the unsolved problem of finding a rapid, thorough, and economical process or machine for decorticating the fiber.

It is not strange that the effort in this direction has been continuous, as the incentive is so great, when we consider that the supply of this fiber is limited to that which can be obtained from skilled hand-labor, capable of stripping only a couple of pounds per day. We must not, however, forget that this Chinese labor costs only about five cents a day (not as yet limited to eight hours nor much influenced by organized trades unions), and is a formidable competitor with any machine which cannot do its work rapidly and economically.

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\*A report on this subject by Consul Williams was printed in Consular Reports, No. 51, March, 1885, p. 528.

Admirable as this fiber is acknowledged to be in point of luster, strength, durability, and adaptability to a variety of uses, it cannot obtain a fixed commercial value until the time arrives when reliable supplies can be safely depended upon at a market price which will not materially fluctuate. Unlike flax and hemp, the rhea stems have not given good results when exposed to the rotting process, and this method has consequently been abandoned.

Attempts have been made at home as well as in Europe to effect the object by a chemical process. For this purpose the old system of Bralle has been revived. This consisted of immersing the stems in a heated solution of alkaline products, such as green soap, soda, potash, &c. This process has been found impracticable on account of the cost of heating a quantity of about 300 to 400 gallons of water to treat half the number of pounds of stalks, yielding about 15 to 20 per cent. of fiber, and the additional cost of the chemicals required in the solution.

#### DECORTICATION BY MACHINERY.

It is now generally conceded that the only practical mode of stripping the fiber from the stems is by machinery, and this again can be divided into two classes of treatment, viz, treatment of the green stems and treatment of the stems after drying. A great deal of attention has been given to both methods of treatment, and numerous patents have been taken out and machines constructed for either purpose, but only few have been of practical use.

Having had no opportunity of seeing any of the machines for dealing with the dry stems at work, I cannot express an opinion on their merits.

If machines constructed on this principle could effectually and economically separate the fiber, the difficulty of drying the stems is encountered at the outset. In some countries, and especially in India, the best crops are obtained during the rainy season, when it is quite impossible to dry them in the fields, and to dry them by artificial means is out of the question. The stems in the wet or half-dried state very readily become moldy and ferment, and thus very easily spoil the fiber. Then, again, while the stems, if thoroughly dried, can be easily separated from the wood and the pellicle, and the gum, which becomes very brittle by long standing, can be removed; this is not the case if the stems are not quite dry. In this instance bits of the wood or of the pellicle still adhere to the fiber, and are very difficult to eliminate.

For these reasons it is easy to understand why, if machines which deal with the dry stems might be found useful in special cases, they cannot be considered capable of general application.

For this reason attention has been given to the separation of the fiber from the green stems, and in this we may say that good progress has been made in the right direction, and that the processes which now exist, if not thoroughly perfect, and while the methods are still open to improvement, yet they allow the fiber to be separated in such a way that the process can be carried on on a commercial scale under present circumstances.

I am indebted to a recent work of Mr. P. A. Favier, of Villefranche (himself the inventor of processes, both mechanical and chemical, for the preparation and utilization of the fibers of ramie, and which have been described in the consular records), for the following list of patents for the treatment of ramie taken out since 1882:

*In Europe.*—Marins Moyret, at Lyons; Billion, at Marseilles; De Puydt, at St. Nicolas (Belgium); Soler, at Paris; Viney, at Paris;

Schiefner, at Essonnes, constructed by Fuay & Co.; Bauer, at Paris (of Landtshia), constructed by Vertoungen; Taylor Burrows, at Lille; Angilbert, at Paris; Allec, at Grenoble; I. Caulec, at Paris (of Landtshia).

*In the United States.*—Arthurs, at New Orleans; Émile Lefranc, under auspices of the New York Ramie Fiber Manufacturing Company; T. Albee Smith, Saint Louis, Mo.; Gelston Sanford, Brooklyn; L. C. Rutledge, Jamaica, constructed by Heebner & Sons, Landsdale, Pa.; George Gibson, Pittsburgh, constructed by Butler & Gardner, Pittsburgh.

The following machines were also placed on trial at Calcutta between the 15th and 20th of October, 1884:

- (1) The machine of Berthet.
- (2) Machine of Hatri Bozoah, of Assam.
- (3) Machine of Pownall, of Wellington.
- (4) Machine of Cantwell.

(5) Machine of H. C. Smith, constructed by Messrs. Death & Elwood, at Leicester.

The latter was awarded the prize, and worked on the green stalks.

According to the official report, this machine treated in ten hours 1,600 maunds of green stems, with a yield of 3.75 per cent., 60 maunds of fiber, the equivalent of 320 maunds of dry stems, returning 18½ per cent.

This machine, although it is said to do its work well, is still open to improvements, especially in regard to the amount of fiber produced and the high cost of the machine itself. A favorable situation as regards the supply of water is also necessary, as will appear from a brief description of the principle involved in the working of the machine.

#### THE H. C. SMITH MACHINE.

It consists of a drum with beaters revolving at a high speed in front of the feed-plate, through which the green stems are pushed, and thus exposed to the action of the beaters, which not only break the wood in small fragments, but effect also a scraping action on the bark, and cleanse the fiber thoroughly from the adhering pellicle and other vegetable matters, in which they are assisted by a jet of water which, working under a good pressure from below, forms a kind of flat-water cushion, and keeps the stems exposed to the action of the beaters while at the same time helping in removing the vegetable matter and a portion of the gum. The machine, although originally designed for the extraction of other fibers, has been applied to the treatment of rhea-stems.

#### THE BERTHET MACHINE.

It is claimed by the inventors of machines which treat green stems, that these have not been well handled by the distant countries where the ramie is extensively cultivated, and that the supply obtainable in Europe of green stalks affords but little opportunity to exhibit the capacity of their machines, but this difficulty seems in a fair way of being obviated, as Mr. Berthet, of Rouen, assures me that arrangements have been made to test his machine in Algiers as soon as the crop will be gathered, about October or November next, and that at that time an authenticated detail of its daily work will be given.

I had an opportunity of witnessing a trial of this machine recently at Paris, but the test was imperfect, as many of the stalks transported from the south of France arrived in a dry state. The stalks which were green were readily and thoroughly acted upon by the machine, which

by its apparent solidity and precision of movement, seemed capable of performing the amount of work claimed for it under favorable circumstances—two hundred kilograms per day, requiring the labor of two men and a boy.

It is the fault of the subject that a more precise direction for stripping the fiber from the stem cannot be given. However, the matter will be soon definitely settled.

#### UNGUMMING.

The ramie, as before observed, brought from China or India, contains a glutinous substance which prevents combing without previous ungumming. Thanks to the scientific efforts of many who have given attention to this branch of the subject, combined with the practical efforts of such men as Frémy and Berthet, this process is successfully carried and is commercially profitable.

The theory is recognized that the fiber is accompanied in the bark by three substances—cutose, pectose, and vasculose.

These products having been previously estimated by analysis, the necessary amount of chemicals for the ungumming is easily calculated.

The cost of ungumming and bleaching in the works of La Société Générale de Ramie at Malaunay, under the management of Mr. Berthet, is about 15 centimes per kilogram.

The process which passed under my observation was as follows:

(1) The ramie was suspended on sticks in vats of pure water for two or three days.

(2) The water was pressed out and it was removed to a cylinder filled with heated water and chemicals, under pressure of four atmospheres for six hours, and then rinsed in running water.

(3) It is again subjected to similar treatment in a cylinder of heated water under pressure and containing other chemicals, then washed and rinsed.

#### BLEACHING.

The Berthet bleaching process was also simple. The ramie, ungummed as above described, was placed in a vat of chloride of lime, then washed and passed through an acid bath, again washed and passed through an acid bath, and washed again, and after passing through a softening bath dried in a drying-room. The average loss in the above treatment is about 300 kilograms to each 1,000 kilograms.

#### SPINNING AND DYEING.

The spinning at the Berthet factory was carried on with as much facility as that of any other textile. The capacity of the works was small, consisting of 1,000 spindles, spinning yarn from Nos. 1 to 50. (The French computation is 1,000 meters to the kilogram.) Average cost of manufacture of yarn 2 francs per kilogram; average production in No. 25 yarn, about 175 kilograms per day.

Prices of yarn.	per kilogram.	Francs.
No. 10 .....	per kilogram.	5
No. 20 .....	do.	5.25
No. 30 .....	do.	5.60
No. 40 .....	do.	6.45
No. 50 .....	do.	7.25
No. 50, double thread .....	do.	7.75
Ramie combing in ribbon .....	do.	4.50
Ramie in bobbin, round ribbon .....	do.	4.75
Waste of ramie sells readily for .....	do.	1.50

Number of work-people employed, 14; 3 men, 3.50 francs per day; 11 women, 2.25 francs per day.

The average cost of the ramie ungummed is about 1 franc per kilogram, delivered at the factory. This is its market value now.

In the spinning process (1) the bleached ramie is given to a machine with fluted rollers, called softening-machine; (2) then passes to a preparing machine, the back part of which receives the ramie by carrier and delivers in front in ribbons; (3) four machines are required for doubling and droving; (4) passes to combing machine; (5-8) three droving and doubling machines are required; (9) the last machine is a roving frame, which puts the ribbon on bobbins; (10) flyers, for making yarn.

Every hue and tint can be given to the ramie, and no serious difficulty arises in subjecting it to the usual dyeing processes. Care must be taken to preserve the luster, and permanence of the colors, which is accomplished by the judicious use of caustics. Upon the whole, we can safely say that the fibers of rhea take colors better than flax and tow, and as well as cotton, wool, and silk.

#### WEAVING.

There is a natural reticence on the part of manufacturers who have employed ramie by itself or in a mixed form to give full information concerning its intrinsic value. This can be ascribed to the fact of the scarcity of the article and the desire which they have to increase their consumption of it as the supply increases. It is readily woven by itself, and forms admirable mixtures with silk, wool, and cotton, as well as linen. The machinery differs but little from that required for other articles.

In rendering this imperfect statement, in reply to numerous requests for information on this subject, I have attempted without exaggeration to state the true aspect of the ramie industry, and the conclusion arrived at from the most careful examination and study, which is necessarily limited to a small area, beyond which it was impossible for me to pursue the inquiry, is that a decorticating-machine is procurable which will do its work fairly and at moderate cost, and that the ungumming and bleaching process, spinning, dyeing, and weaving are as readily and economically effected in the case of rhea, as in the case of any other textile, and its uses are no less varied and important.\*

CHAS. P. WILLIAMS,

*Consul.*

UNITED STATES CONSULATE,  
*Rouen, August 19, 1886.*

### BORDEAUX OLIVE OIL.

#### REPORT OF CONSUL ROOSEVELT, OF BORDEAUX.

Bordeaux, though several hundred miles from the oil-producing districts, is famous as furnishing the most superior olive oil in the world.

The exporters buy the oil from different proprietors in varying quantities and qualities, the latter depending upon the method of cultivation, soil, and preparation.

\* The samples of ramie in every process of manufactures which accompanied this report, have been deposited in the National Museum, Washington, D. C.

The oil is usually transported to Bordeaux in a crude state, and is here refined. As there is a fixed standard as to color, consistency, and flavor, oils of equally good qualities, no matter from what source obtained, are blended until they acquire the proper standard. To successfully blend oil requires long experience, excellent judgment, taste, and an incorruptible character, since the opportunities to successfully admit adulterants are many. Houses having obtained the public confidence never resort to adulteration. Firms selling adulterated oils find markets only in South America and Mexico. Most of the olive oils exported from this consular district come from the department of Var, in South-eastern France, and the country surrounding Genoa, Italy, and are respectively known as the "huile d'Aix" and "huile de Nice." Large quantities of olive oil are produced in Tuscany, but, owing to the quality, find little demand on this market. Sicilian oils are mostly employed for manufacturing purposes. Cotton-seed oil, enjoying a certain commercial favor, has in no manner affected the Bordeaux oils, as none of the reliable houses here handle it.

Olive oil is exceedingly sensitive, and consequently great attention is devoted to the receiving vats and wells, which, in France, are usually underground. To preserve the oil it is absolutely necessary to keep it in a cool place. The wells are tin-lined, and the vats are usually of tiling cut in the stone.

Poppy, cotton-seed, colza, sesame, and pea-nut oil are employed in adulterating olive oil. A simple way to test the purity of olive oil is to put a small quantity on a piece of bread, thoroughly masticate, and if, after swallowing, a disagreeable taste remains in the mouth the oil can safely be condemned; if, on the contrary, a sweet taste remains the oil is pure. The principal exporters of fine olive oil from Bordeaux to the United States are Messrs. Barton & Guestier, Alexis Godillot jeune, J. L. Duret & Co., Alexandre Eyquen, J. P. Fourche, L. A. Price, Nathaniel Johnson & Sons, Évariste Dupont & Co., Garres & Versein fils, G. A. Jourde, Videau & Brun, Louit Frères & Co., F. Uzzol et fils, Brandenburg Frères, and Lestapis & Co.

During the past seven years the following amounts of olive oil were exported from this port to the United States:

Years.	Value.
1879 .....	\$149,327 86
1880 .....	163,903 72
1881 .....	189,974 72
1882 .....	219,577 55
1883 .....	217,280 34
1884 .....	191,358 04
1885 .....	182,314 26
Total .....	1,313,736 48

GEORGE W. ROOSEVELT,  
*Consul.*

UNITED STATES CONSULATE,  
*Bordeaux, France, May 18, 1886.*

**TRADE APPRENTICESHIP IN DENMARK.***REPORT OF CONSUL RYDER, OF COPENHAGEN.*

In the annual report from the director of the free schools in this city for the school year from the 1st May, 1885, to the 30th April, 1886, it is seen that special attention has been devoted to this subject, as also to the manner in which the boys on leaving these schools might be assisted in obtaining a careful preliminary teaching of their future trades. It would appear from the report that in the past year much hesitation and difficulty has been experienced by the school authorities in their endeavors to get these boys satisfactorily placed among the various artisans in this city, inasmuch as the master workmen almost invariably refuse to receive the apprentices as inmates in their own dwellings, and confine themselves to the payment of small weekly wages to these lads, and which for the first year is only a miserable pittance of about 60 to 80 cents per week. It thus becomes most difficult under such circumstances for parents with straitened means to give their children a careful supervision and instruction while learning their future trades; and again the apprentice is thus too often to be found lacking a sufficiency of daily food and clothing as well as of decent lodging.

Whenever the school authorities have in some few instances succeeded in getting some of their young charges placed out in this city, they have always endeavored at the same time to obtain some guarantee that the apprentice should receive a suitable maintenance in his new home.

The greatest part of these children are the sons of severely-trying widows, whose chief pleasure and hope in life is bound up with the welfare of their child; and in some cases the son has been placed in the same workshop where the father had been employed. But as the report truly remarks, it is nevertheless greatly to be deplored that the apprentice in these days is no longer so closely identified with and received as a member of his master's household as was the case in by-gone days.

A strong desire would now seem to be felt on all sides to arrive at some favorable solution of this unsatisfactory state of things, and where the interests of both parties might be made more identical, inasmuch as the relations of employer and workmen should be one of peace rather than that of constant strife.

It would seem, also, to be the wish that the guild system of olden days could again be brought into existence under some new form more adapted to the more advanced views of the present day; and in full accordance with the maintenance and strengthening of the bonds of harmony and good fellow-feeling amongst all who may be brought together in the same work. In any way it would unfortunately seem to be an undeniable fact, that in the present day a very large proportion of the apprentices, both physically and morally, come to grief during the term of their apprenticeship, owing to their lives being passed under such disastrous conditions. They are in the receipt of miserable wages, and, in too many cases, insufficiently engage in learning their trades; in the early period of their apprenticeship being chiefly employed as errand boys for the household work or in fetching drink for the older workmen, thereby laying the foundation of idle habits, with a loss of in-



clination for his work, and too often in these workshops too many bad examples in the older hands are daily placed before the eyes of these youths. Drink, political discussions, constant strikes, all tend to make the path of the apprentice one of extreme difficulty and danger.

The director of these schools, with all these undesirable facts constantly being brought under his notice, holds firmly to the opinion that the day is not very far distant when a more general feeling will spring up in favor of reverting in some way to the old apprenticeship laws and, at any rate, the attainment of some amelioration in the present condition of the apprentices. He considers that the relations between the two contracting parties must necessarily be of such nature that the employer shall receive full guarantee for the continued services of the apprentice during the entire term of the contract; and that it will be necessary that very clear and precise stipulations should be fixed for regulating the natural rights and duties, with courts established for easy and quick redress where any breach of contract might be speedily heard and adjudged.

As the director, however, fears that it may yet take time before such a desirable change can be introduced, and as the only aid to be found at present for the partial relief of these hard conditions of the apprentices is the institution under the name of "Apprentices' Home," supported by charitable contributions, but unfortunately only of very limited size, he proposes to make an appeal to the benevolent public for funds to defray the expenses of building and maintaining a school for a course of advanced tuition to the rising generation of handicraftsmen, in which both theoretical and practical work would go hand in hand and a free admission to which might be bestowed upon the most worthy of the boys attending the free schools on their attaining the age of fourteen, and in which school they would receive a training course of one year's duration.

The school should be erected in some convenient part of the city and the pupils employed, according to their natural dispositions and inclinations, during the first part of the day (until dinner time), in good workshops, where they would be instructed in the trades they propose to follow; in the afternoon, in the study of such branches as may be of practical service to them in after life; and in the evening, after tea hours, in receiving a course of instruction in technical knowledge. Such a school, calculated for the reception of fifty boys, he estimates might be maintained at an average expense of \$3,200, and it would be desirable, when sufficient funds were raised, to be in a position to render temporary assistance to the most promising scholars on leaving the school.

In concluding his report the director strongly emphasizes his opinion that it is a social problem of no small importance to arrive at some satisfactory change in the dangerous and highly deplorable condition of the apprentices in the present day.

H. B. RYDER,  
*Consul.*

UNITED STATES CONSULATE,  
*Copenhagen, July 5, 1886.*

**CO-OPERATIVE DAIRY IN DENMARK.***REPORT OF CONSUL RYDER, OF COPENHAGEN.*

Under the present widespread depression in all branches of agriculture, when the farming classes find themselves forced to use every exertion in order to get as much as possible in all ways out of their thrift, it has been thought advisable to make public the results given by this undertaking in the first year of its operations—a result which would seem to afford clear proof how much can be effected by the union under one great center when adequate ability is at the same time found to reign, and which, to all appearances, has been the case in these works. One cannot otherwise than feel that a great encouragement is hereby held out to the smaller land-owners in other parts of the Kingdom to establish similarly conducted dairies out of the resources of many small holdings, and by such means find themselves in a position to dispose of their milk produce at the highest prices. With this view the following details of this dairy's expenses and receipts, as also some of the chief rules of the society, are given.

**COST OF DAIRY.**

The dairy in question has been established through the co-operation of about eighty small land owners, all of whom are jointly and separately responsible for the amount of the loan contracted for the erection of the buildings, the machinery, inventory, &c. The dairy was fully completed in the spring of last year, being built upon ground where there is a plentiful supply of water for the drift, and the money was borrowed at an interest of  $4\frac{1}{2}$  and 5 per cent. It is stipulated that one-half of the loan shall be paid off in the course of ten years and the remainder to be held under permanent mortgage

The entire works have cost as follows :

Buildings with ground.....	\$3,938
Machinery and two centrifuges.....	2,378
Inventory .....	597
Sundry expenses.....	121
Total.....	7,034

The buildings are very solid, and well constructed and fitted up in a practical and appropriate manner.

On the 1st July, last year, the first delivery of milk commenced, at which time an aggregate number of 592 cows were entered as participants.

The milk was conveyed in hired vehicles, and the expenses of transportation from 1st July to 31st December, 1885, amounted on the average to twenty-seven hundredths of a cent per kande (a Danish measure equivalent to 4 pounds). During the summer months the milk is brought twice in the course of the day, whilst in the winter months only once. The price paid for the milk per kande is at the rate of one-seventh of the highest quotation price of butter, taken from the weekly published returns from the merchants' butter committee, and the suppliers of fresh milk are bound to take back the whey, mixed with buttermilk, at the price of half a cent per kande.

The expenses and receipts of the dairy for the half-year's operations are stated to have been as follows :

## EXPENSES.

Cost of 1,247,854 pounds of milk .....	\$12, 162
Board and wages of staff and work people .....	620
Transport of milk .....	893
Coal .....	432
Butter casks .....	295
Divers expenses .....	262
Interest on loan .....	121
Amount .....	14, 805
Projet .....	1, 290
Total .....	16, 095

## RECEIPTS.

Butter .....	\$12, 872
Skimmed milk .....	824
Residual produce .....	793
Cheese .....	146
Used in the dairy .....	186
Fines from work people .....	14
Total .....	14, 835

## STOCK ON HAND 1ST JANUARY, 1896.

147 staves for casks .....	70
33,990 pounds of cheese .....	910
1 day's milk .....	80
300 barrels of coal .....	200
Total .....	16, 095

The butter produce has invariably been consigned to an agent in England and has without exception always met with a ready sale at very high prices, insomuch that the net returns received have on the average exceeded by about 80 cents per 100 pounds the very highest prices quoted in the home butter markets for best class butter. From the purchased milk (1,247,854 pounds) there has been produced 46,797 pounds of butter—that is to say, on the half year's average a consumption of 26.67 pounds of milk to 1 pound of butter. The profits earned in the half year, as seen by the foregoing accounts, were of \$1,290, equal to 18 per cent. on the building capital, and somewhat over \$2 for every cow admitted as participator—a return which must certainly be viewed as highly favorable when it is taken into account that the milk has been bought at fully as high rates as have been paid by the Union dairies, and remembering also that the establishment is only in its infancy, when a certain amount of difficulties and defects have always to be encountered and overcome.

## REGULATIONS.

Since the 1st of January of the present year several changes would appear to have been made in the dairy's regulations. For example, it has been resolved to discontinue for the present any further making of cheese, the price of this article being now so low that it is found more profitable to make use of the skimmed milk for the feeding of swine, and such milk is now returned to the participators—to each in

proportion to the delivered quantity of fresh milk at the price of 1 cent per kande. A further admission of new members to participate in the works has also been agreed to, under the conditions however that for each cow entered as participator the sum of ten kroners (\$2.70) shall be paid as entrance fee, the same to form the foundation of a reserve fund. The number of cows entered are stated to have increased from the original number of 592 up to 954; and it has in consequence been found necessary to supply the dairy with another large size centrifuge, and in order that the skimmed milk can be returned to the several suppliers of fresh milk in as sound condition as possible—now that the warm season is approaching—a heating apparatus will be procured with which the milk can be warmed up to 70° C. (where by souring will be obviated) to be again cooled down to 10° previous to its delivery from the dairy. The dairy will also be allowed to purchase milk from parties who may not be shareholders, any eventual surplus from such sources to be placed to the credit of the reserve fund, a surplus of profits arising from the milk received from the shareholders to be distributed amongst said shareholders in the proportion to the quantity of milk received in the course of the year from each member.

H. B. RYDER,  
*Consul.*

UNITED STATES CONSULATE,  
*Copenhagen, June 15, 1886.*

## AGRICULTURE IN MOROCCO.

*REPORT OF CONSUL MATHEWS, OF TANGIER.*

### DESCRIPTION OF LAND.

The nature of the soil in this country varies very greatly and depends, as it were, upon the situation, its proximity to the sea, to rivers, to mountains, to mines, &c.

As a general rule, two classes of soil predominate, viz, clayish where near rivers or mines, and in the plains; sandy loams near the sea-coast or the Sahara.

Generally speaking, all the soil of these regions is extremely productive, as is the case with all virgin soil.

### CUSTOMARY TENURE OF LANDS.

Cultivable land is generally rented by the year, or from one crop to another. There are some exceptional cases where the tenure is made for three years. These arrangements refer principally to the land held by natives under grants from the Government, but private freehold property may be rented for any term of years.

### CUSTOMARY RENT OF LAND IF WORKED UNDER LEASE.

The rent varies according to arrangements; if paid in cash, from two to three dollars per acre; if in kind, the landlord gets from one-fifth to one-third of the produce after all expenses have been paid.

### GENERAL CONDITIONS OF LABOR.

Labor is paid either in kind or in specie. The chief laborer takes one-fifth of the gross produce, which is subdivided among his assistants and

himself. He also gets two pairs of slippers (costing about \$1) per annum, and sufficient dari seed or barley for his maintenance is deducted from his share when the crops come in. If there be failure of crops the farmer loses it.

#### DESCRIPTION OF TOOLS USED.

The hoe and the pick ax play a very important part in the field labor, but for grain-sowing a primitive plow of native make is used. It consists of a long curved pole, with an iron sock about eighteen inches long; a wooden cross-beam is fastened to the pole, from which starts the gear which fastens the steer to the plow. This machine is drawn by bullocks, mules, asses, horses, camels, and sometimes men and women are fastened to assist over rough ground.

The thrashing is done by sticking a long pole in the midst of the pile of grain and fastening to it a number of beasts of all sorts, making them trot over the grain until it is broken from the husks. After that the grain is thrown up in the air, by means of wooden shovels, until the air separates the chaff from the grain.

No machinery is used beyond what is stated above. Of late years some American plows and agricultural machinery have been introduced, but there is no end of difficulty to wean the natives from the customs of their sires, and the introducers of the implements must either work themselves or get foreign workmen to do so until the natives learn their management.

#### WAGES OF LABORERS, MODE OF PAYMENT, AND HOURS OF LABOR.

When laborers are paid wages in cash, these vary from five cents per day to twenty cents, according to locality and class of laborers; the payment is made daily; the hours of labor are generally counted from sunrise to one hour before sunset, and consequently vary from eight hours in winter to thirteen hours in summer. In towns wages range higher and hours shorter, but these are only for private works.

#### SUBSISTENCE OF LABORERS.

The abstemiousness of the Moors renders their subsistence most uniform. In the northern districts dari seed made into bread, wild fruit, and water are the chief components; an occasional drink of milk from the farm house, buttermilk, or a pottage made of the same grain or of herbs, is considered a luxury; eggs and dairy produce are generally brought to towns for sale, and the laborer never thinks of indulging in them. Meat or fish is never thought of as a necessity, and with the exception of the great Bairam feast, when every household is bound by religion to kill a sheep or goat, meat is never indulged in by laborers or their families.

In the southern districts barley is substituted for dari seed.

Tea, coffee, sugar, wine, and liquors are unknown to the laborer, except when by chance he is offered a cup of tea or coffee by a traveler.

The cost of maintenance does not exceed 4 or 5 cents a day.

#### CLOTHING.

The general clothing of laborers is as follows:

1 pair of cotton or woollen drawers .....	\$0 50
1 cotton shirt .....	75
1 woollen gillabia or overall shirt .....	2 00
1 turban or cap .....	25
Total .....	3 50

Some substitute a blanket for the gillabia, and thus the woman can wear the husband's clothes. Generally speaking, the laborers have only one set of clothing, and never think of replacing any article until it is completely worn out. Not much trouble is given to the laundry department, but when an article is too far gone to dispense with washing, it is taken off and washed. Thus one can seldom see a farm laborer with his clothes of one uniform degree of cleanliness.

#### SHELTER.

Generally speaking, the laborers have no houses. They dwell in huts made of grass, straw, or rushes, which they have rent free, as each village lodges its laborers.

#### COST OF LABOR.

Working on the principle of one-fifth part of the produce, which is the general rule, the proportion is simply 20 per cent. on the value; and as prices of grain fluctuate continually, it is impossible to arrive at a price per measure.

#### LOCAL OR NATIONAL TAXES.

The farmers have to pay the tithes of their produce—*i. e.*, 10 per cent. on the value afterwards; the irregular contributions or taxes are paid on everything the farmer possesses for the time being.

This tax varies from 2 per cent. on the whole up to 10 per cent. or more, according to the venal inclination of the collecting functionaries. Besides this, there are many other calls made upon the unfortunate farmers, who barely find themselves at the end of the season with sufficient means to provide for the following crops.

The tariff on foreign imports is 10 per cent. on the value.

#### PRODUCTS EXPORTED.

All classes of grains are not allowed to be exported. I shall mention those which are generally shipped. They consist of beans, maize, chick-peas, millet, canary seed, lentils, dari seed, fenugreek seed. These are sent to England, France, Spain, and Portugal. The rate of freights vary from \$4 to \$7.50 per ton, according to number of crafts that offer. Neither the distance nor the season make any difference, demand and supply being the chief motives of everything. The movements are more spasmodic than in any other part of the world.

#### GENERAL INFORMATION.

Wheat and barley are not allowed to be exported, as the treaties allow the Sultan the privilege of prohibiting the shipment of grains when he thinks proper. On the other hand, the Sultan has, during the last two years, acted in direct contravention of the same treaties by shipping for his own account several cargoes of wheat and barley, to the detriment of all foreign traders. This has occasioned strong representations on the part of England, as the treaties of 1856 bind the Sultan to abolish all monopolies.

Cattle are not allowed to be exported, but each foreign power has a right to claim the privilege of shipping 6,000 bullocks per annum, paying an export duty of \$5 per head. These grants, which are given to Governments, are generally distributed by the foreign representatives to their countrymen who request the same, for shipment to Gibraltar, Spain, and Portugal.

There is not the slightest doubt that were the country to be developed, and not hampered with the heavy taxation, general prosperity would accrue to Morocco, as well as to foreign nations who have commercial intercourse with it, as if the farmers prosper they would have more money to buy imported goods on a larger scale.

With this object in view England and Portugal are trying to establish new commercial treaties, but although over four years have passed since negotiations commenced, nothing has been realized so far.

#### PRODUCTS OF MINES.

According to statements made by scientific travelers at various periods, the mineral wealth of this country is very great. Antimony, coal, copper, gold, iron, lead, manganese, quicksilver, silver, and mineral salt have been found in different parts of the country, but the Sultan will not allow any of these mines to be explored.

After great diplomatic pressure to induce the Sultan to allow the development of the mineral wealth, last February a circular was sent by the minister for foreign affairs asking for tenders to explore some antimony mines in the neighborhood of Ceuta, towards Tetuan, but the restrictions put forward were such that only one offer was made, and that offer is said to have been refused by the Sultan.

Gold is found in the Atlas Mountains and very rich silver mines near Santa Cruz, in the plains of Meejina. This was reported to the Emperor, Sidi Mohamed, to be extremely rich, and he accordingly sent some persons conversant in minerals to inspect and report upon it. Previous to their departure, however, they were secretly informed from the Emperor that he wished to discourage the working of these mines, lest the province might be thereby rendered too rich and powerful, foreigners may be attracted thereto, or the people be enabled to throw off their allegiance. In consequence of this, after a formal examination had been made, the mines were reported to be good for nothing and would not pay for the expense of working them. The entrance was then broken in, and the Shelluhs, discouraged by this unfavorable report, and not suspecting the motive for destroying the mine, paid no further attention to it.

These mines were probably worked by the Portuguese when they were in possession of Santa Cruz and Ajurem, in the sixteenth century.

Lus produces iron, copper, and lead ore in several places. The mountains of Adaultil are extremely rich in iron ore, which the semi-independent tribes manufacture themselves into gun-barrels and other articles. At Tesellerst the copper mines are extremely abundant, but the Kabyles work them only as they want the ore.

The country contiguous produces saltpeter, but even this is not allowed to be developed.

#### TEXTILE FABRICS.

The only textile fabrics in this country are a few hand-loom, for woollen stuffs worn by the Arabs, and these are made in private families by the women generally, and therefore no estimate of cost or labor can be arrived at with anything like reliable results. The natives in most cases employ the wool from their own sheep, and their women work at home; thus no paid laborer is employed.

When these articles are made for sale the same process is employed; the manufacturer is the workman and merchant at the same time.

The primitive art of weaving is carried on considerably in Morocco. The loom is of the rudest kind, and is probably the same that has been in use for thousands of years.

Fez is the chief seat of silk weaving, while Rabat and the city of Morocco contain many looms for wool, where families devote themselves to the manufacture of rugs and carpets of rich colors.

Weaving is an occupation confined to the poorer classes, and in no way indebted to patronage or capital. Mineral dyes are hardly used, but madder, pomegranate peel, henna, logwood, cochineal, and indigo supply the ordinary colors. Of these the three last are imported.

As far as I can learn, mordants are unknown.

FELIX A. MATHEWS.

UNITED STATES CONSULATE,  
Tangier, September 27, 1885.

## AMERICAN INSURANCE COMPANIES IN AUSTRIA.

### REPORT OF CONSUL-GENERAL JUSSEN.

Up to the year 1873 no foreign insurance company, with the exception of the Leipzig Fire Insurance Company, whose concession dates from the year 1837, was authorized to take risks in Austria. The law extending this privilege to all other foreign insurance companies under certain conditions was passed in March, 1873, and its immediate consequence was an immigration *en masse* of foreign companies. In 1873 15 companies obtained the concession, 22 more followed in 1874, and the number has since been increased every year until now more than 100 foreign insurance companies are transacting business in the Empire.

The following table shows the premiums in florins received by two American life insurance companies in this Empire; also the receipts of two of the largest German, and one English life insurance company:

#### GOTHARD LEBENSVERSICHERUNGSGESELLSCHAFT.

[Home office in Gotha, Germany.]

Year.	Receipts.	Year.	Receipts.
	<i>Florins.</i>		<i>Florins.</i>
1875.....	50,000	1881.....	248,701
1876.....	81,712	1882.....	268,496
1877.....	98,737	1883.....	349,508
1878.....	131,345	1884.....	409,076
1879.....	156,343	1885.....	469,281
1880.....	196,244		

#### GERMANIA LIFE INSURANCE COMPANY.

[Home office, Stettin, Germany.]

Year.	Receipts.	Year.	Receipts.
	<i>Florins.</i>		<i>Florins.</i>
1875.....	26,742	1881.....	248,167
1876.....	67,800	1882.....	264,897
1877.....	90,610	1883.....	307,866
1878.....	110,543	1884.....	387,130
1879.....	151,183	1885.....	461,279
1880.....	193,804		



## THE GRESHAM LIFE INSURANCE COMPANY.

[Home office, London, England.]

Year.	Receipts.	Year.	Receipts.
	<i>Florins.</i>		<i>Florins.</i>
1875.....	32, 470	1881.....	911, 012
1876.....	90, 362	1882.....	1, 201, 556
1877.....	223, 688	1883.....	1, 502, 285
1878.....	365, 110	1884.....	1, 723, 525
1879.....	545, 865	1885.....	1, 876, 562
1880.....	726, 183		

## THE EQUITABLE LIFE INSURANCE COMPANY OF NEW YORK.

[Concession obtained in 1882.]

Year.	Receipts.
	<i>Florins.</i>
1883.....	14, 306
1884.....	21, 695
1885.....	33, 654

## NEW YORK LIFE INSURANCE COMPANY, OF NEW YORK.

[Concession obtained in 1876.]

Year.	Receipts.	Year.	Receipts.
	<i>Florins.</i>		<i>Florins.</i>
1876.....	569	1881.....	139, 104
1877.....	11, 429	1882.....	151, 326
1878.....	16, 528	1883.....	202, 704
1879.....	34, 057	1884.....	268, 974
1880.....	59, 174	1885.....	309, 663

The participation of foreign companies in the business of life insurance in the Empire of Austria amounted to only 1.5 per cent. in 1875, but rose to 16.4 per cent. in 1884.

No American accident, transportation, or fire insurance company has as yet, as far as I am informed, obtained a concession from the Government of Austria for the transaction of business within the limits of the Empire.

The returns show that the business of both the American life insurance companies is rapidly increasing. They seem to have implicit confidence in the stability of their respective ventures, and have furnished the best possible proof of the sincerity of their expectations for the future by making large purchases of real estate in the business center of the city.

The New York Life Insurance Company has purchased a very valuable building site, situated on one of the most prominent and valuable business corners; has torn down the old and venerable building erected upon this site more than a century ago, and is now building a palatial edifice at a cost of more than 200,000 florins. A large sign, of "American dimensions," placed in front of the stately pile now in process of erection, informs the public that this modern improvement is due to the enterprise of the New York Life Insurance Company, and doubtless contributes in a considerable degree to increase the confidence of the Viennese in the responsibility and business energy of this company.

The Equitable Life Insurance Company of New York, although its concession dates back to only 1882, seems determined not to be overshadowed by its American competitor, has just purchased two large buildings adjoining the site of New York Life Insurance Company, and intends to tear down these ancient landmarks and erect a large and commodious building upon the site.

E. JUSSEN,  
*Consul-General.*

UNITED STATES CONSULATE-GENERAL,  
*Vienna, July 26, 1886.*

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## TARIFF NEGOTIATIONS WITH TURKEY.

### REPORT OF CONSUL-GENERAL HEAP, OF CONSTANTINOPLE.

In answer to inquiry as to what progress has been made with the tariff that has been in negotiation for two years past between the delegates of the Ottoman Government and those appointed by several foreign Governments, I have the honor to state that considerable advance has been made in framing the tariff in concert with the delegates of Great Britain, Russia, Germany, and Italy.

They have left a few articles only in suspense, as it was thought advisable to leave them to be adjusted by the delegates of the countries whose commerce they principally concerned.

The commercial treaties between Turkey and Austria and France are still in vigor, whilst those with all other Governments having expired by limitation have been denounced. Until the new tariff is put in force a general régime of duties at the rate of 8 per cent. ad valorem has been fixed by the Ottoman Government on all imports.

A divergence of views has arisen in regard to some articles in the tariff under discussion between the Ottoman delegates and those of Austria and France, one of the points of disagreement being the duty on ready-made clothing, which Austria, in the interest of Hungary, demands shall be fixed at a rate not exceeding 3 per cent. ad valorem. I understand that France insists upon a similar rate.

Another point upon which it is believed Austria lays still more stress is the claim for certain special privileges in favor of her overland trade with Turkey, which, in view of the approaching junction of the Ottoman railroads with the railroad system of Austria Hungary, is a matter that, besides its political, is of considerable commercial importance to that Empire.

The Turkish delegates being unable to accede to these demands the negotiations have been suspended.

The reduction of duties on clothing demanded by Austria and France, if acceded to, would render it necessary to reopen negotiations with the delegates of all the powers and to review a considerable portion of the tariff already agreed upon, for it would be claimed that a proportionate reduction should be made on all fabrics that enter in the manufacture of clothing.

Besides, the admission of clothing made mostly by machinery at an all but nominal rate of duty, would cause the ruin of innumerable small tradesmen in this country, who make clothing principally by hand, as

well as of manufactures of cheap cloths, textures, and fabrics, which give employment to a vast number of the indigent class. The delegates of Turkey are naturally desirous of protecting these home industries.

The delegates with whom negotiations have practically come to an end have accepted the following rates of duty on ready-made clothing :

On articles of men's, women's, and children's wearing-apparel and made of goods not specified elsewhere of cotton or linen, 600 piasters (\$26.40 per 100 kilograms) (220 pounds), equivalent to 15 per cent. ad valorem.

The same made of wool or half wool, 825 piasters (\$36.30) per 100 kilograms = 15 per cent. ad valorem.

The same made of silk, if lined with other materials, the duty per 100 kilograms as on silk. N. B.—The duty on silk is equivalent to 12 per cent. ad valorem.

The same made of silk, if unlined or lined with silk only, 6 per cent. above the duty on the silk.

Underclothing of linen or cotton fabrics, 625 piasters (\$27.50) per 100 kilograms = 15 per cent. ad valorem.

A few only of the principal classes of ready-made clothing are mentioned here, as it would be too long to give the entire list; but they are sufficient to show the duties these articles will pay under the new tariff as accepted by several sets of delegates, but which the Austrian, and following them the French, delegates insist upon being admitted at a rate equivalent to not over 3 per cent. ad valorem, which in practice would probably not exceed  $1\frac{1}{2}$  per cent.

I have gone carefully over the tariff as far as it has been agreed upon, and, with the exception of a few articles, am of opinion that the rates of duty are reasonable and moderate. The estimate of the gross revenues from the customs dues under the new tariff ranges between 12 and 13 per cent. of the value of the imports, while the net revenue will probably scarcely exceed one-half of that estimate.

The most important in value of the imports from the United States are petroleum and alcohol, and it is proposed to take them at rates equivalent to 20 per cent. ad valorem, which is the highest rate of duty in the tariff; but I think this will be reduced to 16 per cent.

I have been occupied for many months past in preparing an alphabetical synopsis of the new tariff, which will be completed as soon as the new tariff itself has been agreed upon by all the powers. I hope it will be found useful to those engaged in the import trade with this country, the form in which the tariff is drawn up being rather complex and confusing.

You are aware that the Porte requested the United States Government to appoint a delegate to concert with theirs upon the framing of a tariff, and that I was appointed accordingly. I notified the Turkish delegates of my appointment and readiness to confer with them at any time they should appoint, and they replied that as they were then engaged in negotiations with three or four separate sets of delegates they did not have one day in the week free to assign to me, but would let me know when the progress of the negotiations left them a free day. I have been recently informed, however, by Mr. Gargiulo that the Turkish delegates did not think it would be necessary to discuss the tariff with the American delegate, and that they considered it would be sufficient to present it in the form agreed upon with the other powers to the United States legation.

Whilst it is true that a tariff accepted by the Governments that have the largest commercial interests with Turkey can be accepted with safety

by the United States, for Russia will obtain the lowest possible rate on petroleum and Austria on spirits, alcohol, &c., and we shall moreover enjoy whatever advantages may be accorded to the most favored nation, this action of the Turkish delegates does not seem to be in accordance with the repeated requests of the Sublime Porte for the United States to appoint a delegate on the tariff commission.

G. H. HEAP,  
*Consul-General.*

UNITED STATES CONSULATE-GENERAL,  
*Constantinople, August 7, 1886.*

### BEER PRODUCTION IN GERMANY.

REPORT OF CONSUL WAMER, OF COLOGNE.

The increase in the production of beer in Germany, and especially in South Germany, has not failed to attract some attention.

In Germany the matter has given rise to much discussion. The establishment of new breweries and recent large investments of foreign capital have been looked upon as rather hazardous, at a time when the trade is considered to have arrived at a stage when the demand threatens not to keep pace any longer with the supply.

Certain trade journals here have already been sounding a note of warning. They, however, do not wish to convey an idea that a serious collapse in prices is imminent, but they deem it prudent to call attention to the fact that the trade during the past year has been strained to its utmost limits to compete with overproduction.

The following table, taken from a reliable journal, gives the production and the cost of the beer of eight of the largest and world-renowned export breweries in Bavaria:

Name of brewery.	Cost of production per hectoliter.		Production.	
	1883-'84.	1884-'85.	1883-'84.	1884-'85.
	* Mark.	Mark.	† Hecto- liters.	Hecto- liters.
Loewenbrauerei .....	8.31	7.05	183,214	253,905
Hackerbrauerei .....	7.57	6.09	208,365	238,921
Nürnberg brauerei .....	6.29	5.2	74,287	68,000
Brauhaus Würzburg .....	7.66	7.03	98,978	110,571
Kulmbach export brauerei .....	3.26	3.23	100,698	110,568
Bärg. Brauhans, München .....	8.38	8.19	62,000	87,685
Münchener Kindl .....	10.28	9.85	44,000	50,818
Storchenbrauerei, Speyer .....	7.97	6.94	39,418	43,685

\* Mark = 23.8 cents.

† Hectoliter = 26.417 gallons.

It will thus be seen that the joint production of the above breweries gives an increase in 1885 over 1884 of not less than 145,518 hectoliters.

The following statement shows the estimated production, the imports and exports, and the consumption of beer in the German Empire from 1872 to 1885:

Years.	Production.	Import.	Export.	Estimated consumption.	
				Total.	Per head.
	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Liters.</i>
1872	33,544,700	53,528	295,822	33,302,406	81.4
1873	37,684,326	71,043	290,705	37,464,724	90.6
1874	38,887,539	99,076	321,524	38,665,091	92.6
1875	39,605,078	119,444	388,111	39,336,411	93.3
1876	39,507,897	131,834	572,962	39,066,769	91.7
1877-78	38,921,012	115,211	659,918	38,376,305	88.8
1878-79	38,810,738	103,431	676,328	38,237,846	87.5
1879-80	37,243,030	87,498	680,279	36,650,249	82.9
1880-81	38,572,121	94,171	855,485	37,810,857	84.6
1881-82	39,109,178	95,903	984,030	38,221,051	85.0
1882-83	39,323,968	100,415	991,914	38,429,469	85.0
1883-84	40,873,112	108,002	1,079,965	39,901,149	87.8
1884-85	42,373,686	104,844	1,153,720	41,324,810	90.3
Average of 18 years	38,804,342	98,800	688,747	38,214,395	87.8

A glance at the above figures will show how great the increase has been in the production of beer since 1872, viz: 33,544,700 hectoliters in 1872 against 42,373,686 hectoliters in 1885, or an increase of 8,828,986 hectoliters; the exports have risen from 295,822 hectoliters in 1872 to 1,153,720 hectoliters in 1885, or an increase of 857,898 hectoliters; and the consumption has risen from 33,302,406 hectoliters in 1872 to 41,324,810 hectoliters in 1885, or an increase of 8,022,404 hectoliters, being 87.8 liters per head against 81.4 liters in 1872.

WM. D. WAMER,

UNITED STATES CONSULATE,  
Cologne, April 10, 1886.

Consul.

## DRINKING IN THE UNITED STATES AND EUROPE.

REPORT OF CONSUL TANNER, OF CHEMNITZ.

### DRINKING IN GERMANY.

Perhaps no subject has been more extensively reported upon than the beer production of Germany, and yet there are few Americans who realize the enormity of this production and consumption in this Empire. It is a well known fact to mathematicians that there are few minds that can grasp the magnitude of numbers after they have passed millions. The total beer production of this Empire in 1880 was thirty-seven millions of hectoliters, which is more than nine hundred and eighty-five millions of gallons. This rose in 1885 to one billion one hundred millions of gallons, computing  $26\frac{1}{2}$  gallons to the hectoliter. I am aware that my figures are much above those given in statistical works, but I have given this subject careful attention, and have stated the entire beer production of Germany, including Alsace-Lorraine, and am sure of the accuracy of my figures. One can, then, form some idea of the enormous quantity of beer produced, when it would form a lake more than one mile square and six and a half feet deep, or it would make a running stream as large as some of our rivers. It may be said that this beer is consumed in this Empire, since the importation of beer into Germany will nearly balance the exportation.

This is only taking into account one item in the economy of drinking in Germany. Wines and all kinds of spirituous liquors are freely used; wines to a much greater extent than stronger liquors. It may be safely stated that the consumption of all intoxicants in this Empire would reach nearly two billions of gallons per annum. This being the case, some faint conception of the enormous drinking capacity of the Germans can be formed. The hops, barley, rye, potatoes, and other ingredients that enter into the manufacture of this enormous quantity of liquors would be more than two billions of pounds, and would form a good sized mountain if placed in one heap. Beer is the national beverage, and is used as such, if not to a greater extent than water, then assuredly equally so.

Wines are used by the wealthier classes at meals, and very expensively used; but beer is never absent from a German table of the rich or poor, and it is a decided favorite with all true Germans.

Since my arrival in Germany I have my first glass of water to see drunk. Beer must be furnished servants for their repasts. I have seen children hardly weaned given beer without any apparent bad effect.

#### MANNER OF DRINKING IN GERMANY.

It is claimed that to counteract the depressing effects of the cold, sunless, humid climate of Europe, that has the tendency to carry on the animal functions with languor and feebleness, stimulants are necessary to arouse those functions to that degree of vigor and activity enjoyed by others that are more favored in this respect. Science may be carried into everything.

The science of drinking has been known and practiced in Europe for ages, and this is a science, simple as it may appear, when compared with the blind, irrational, and suicidal manner of drinking in the United States. This science consists simply in the tardiness of drinking. All drinks are taken sip by sip, a half or three-quarters of an hour being consumed for a glass of beer. This is so simple that one is liable to ridicule for laying stress upon it, and yet on this one point hinges, in my opinion, a question of vast importance to Americans. By this manner of drinking the blood is aroused to greater activity in so gradual manner that there is no violent derangement of the animal economy. By slow drinking the German accomplishes the object of drinking, and gives his animal economy a chance to say, "Hold, enough!" which only slow drinking will do.

Cafés and drinking places in Germany are places of resort for families, and gentlemanly deportment is as much observed in them as in a ball-room. The heads of the best families enter them with wives and children, call for what they want to drink, and order beer or what not for their children, and they sit and pass an agreeable hour over their drinks. No swagger or loud or boisterous conduct is ever seen. There is no stealing into these places as if one were committing a crime. At many theaters and other public places of amusement a gentleman or lady can indulge in a glass of beer or wine while the performance is in progress, no notice whatever being taken of it, and nothing of this kind is out of place unless the person should place the glass to his mouth and drain it at one gulp. But this is never seen here.

Woman unquestionably carries a purifying influence with her wherever she goes, and her presence in the drinking places of Europe drives from them that class of low vagabonds that hang around American drinking places. Hence one never sees a drunken man in a café and rarely even

on the street. Perhaps no better possible illustration of the purifying influences of woman could be found.

Cafés are open to all classes, but the lower classes seldom visit them; they would be abashed by doing so as much as they would by entering a parlor where they would meet refinement and elegant manners. There are some exceptions to this rule in the larger cities, but this is confined to cafés that are well known, and ladies avoid them; but there are no drinking places in Germany but what a lady may enter with all propriety.

Drunkenness is rare, and if so, it rarely manifests itself in a boisterous or belligerent manner, but more frequently takes the shape of song, fun, and a general pleasurable feeling of warmth, energy, and self-command, and hence those horrid crimes that sometimes shock us in the United States are rarely heard of here. Then why should there exist such a difference in the evils of drinking in Europe and in the United States? It is manifestly the result of the manner of drinking in vogue in the two hemispheres.

#### DRINKING IN THE UNITED STATES.

As a whole the people of the United States are the most temperate people in the world. The consumption of intoxicants in Germany per head is four times as great as it is in the United States, the consumption per capita of intoxicants being in Germany nearly forty gallons per annum, and in the United States below ten gallons.

There are a thousand habitual, hopelessly habitual, drunkards in the United States to ten in Germany. And this difference against us arises largely, if not entirely, from the manner of drinking in vogue in the two countries.

In consequence of the low classes who usually frequent our bar-rooms, these places have a reputation corresponding to the classes who hang around them, and when one goes into them he does so by stealth; and to get out as quickly as possible is one incentive to drinking as quickly as possible.

GEO. C. TANNER,  
*Consul.*

UNITED STATES CONSULATE,  
*Chemnitz, Saxony, August 5, 1886.*

#### CONSUMPTION OF ZINC IN BELGIUM.

##### REPORT OF CONSUL ROBERTSON, OF LIEGE.

There exist in Belgium 11 zinc smelting works. These produced, in 1885, 80,298 tons of zinc in ingots, representing a value of 26,847,753 francs, or something over \$5,250,000. But from the ore from which this zinc was produced Belgium furnished only a trifle over 10 per cent., the balance having to be procured elsewhere. Following are the details:

	Tons.
Belgium .....	20,000
Italy and Sardinia .....	73,000
Greece .....	34,000
Spain .....	25,000
Sweden .....	19,000
Germany .....	19,000
France and Algeria .....	3,000
England .....	3,000
Miscellaneous .....	1,000
<b>Total .....</b>	<b>197,000</b>

As shown above, all but 20,000 tons of this 197,000 tons of ore had to be imported from other countries. The great bulk of this was brought to Antwerp, this port being perfectly organized and equipped for handling such ore, as also, I am told, for assaying it.

I do not know, neither have I at the present time any means of ascertaining, the production of zinc ore in the United States, or whether there is a surplus for exportation, but it seems to me that if there is any surplus, it might be exported to this country with advantage. It probably would require some time, as some, and very likely all, the mills have contracts with producers in the various countries mentioned above, which, for a more or less extended period, bind them to take certain quantities; but allowing that this surplus for exportation exists, that matter would right itself in a few years.

The important question is, can the ore be shipped from the mines in the United States to Antwerp at a price which would pay the producers? This question I am unable to answer, but the producers themselves could undoubtedly answer it. There would be no duty to pay. This ore is divided into two classes, viz, calamine, or oxide of zinc, and blende, or sulphate of zinc.

The value, of course, depends on the proportion of zinc in the ore, and the market value of this metal.

At present, zinc being worth in London about £14, a calamine holding 50 percent. of zinc would be worth, free on board, at Antwerp, on the average, 91 francs; blende, of the same percentage of zinc, about 88 francs per ton of 1,000 kilos. Could these facts be brought to the attention of American producers, they might be of use to them.

In conclusion, I will add that the director of one of the zinc furnaces in this consular district told me that he alone would take 20,000 tons of ore per year if he could obtain it at a suitable price, and I am informed that one of the furnaces in Belgium has recently imported a few thousand tons from the United States. I do not, however, know the name of the importer, or the price paid.

G. D. ROBERTSON,  
*Consul.*

UNITED STATES CONSULATE,  
*Verviers and Liège, Belgium, August 13, 1886.*

## THE CROPS OF BELGIUM FOR THE YEAR 1886.

REPORT OF CONSUL STEUART, OF ANTWERP.

I avail myself of an article published in the *Moniteur des Intérêts Matériels* to submit the following remarks upon the condition of the present crops of Belgium. The author of the article claims to have gathered his information from private persons who are thoroughly well posted and reliable. It is not therefore official, but indeed it would be impossible to obtain at this season such information from any of the agents of the Government.

The sowing of the winter grain in the past autumn was effected under very favorable conditions, and the prospects during the winter were excellent, but, unfortunately, after a spell of very fine weather in March there came a heavy fall of snow, covering the ground in some parts of the Kingdom until late in April. To this return of winter can be at-



tributed the insufficiency in some of the products, especially rye, the crop of which is far below the average.

The spring sowing, although very late, was favored by good weather, especially for oats and potatoes, but after two months of fine weather, heavy rainfalls came to compromise everything; especially were the potatoes in danger; the crop, however, is a fair one, although there is some apprehension of rot, and of the quality not being as good for starch as could be wished.

In the main the Belgian agriculturists have little reason to complain regarding the quantity and quality of their products, as the following table, giving the result for each of the provinces of the Kingdom, will show :

[100 is taken as a basis for a good average crop.]

Products.	Wheat.		Rye.		Barley.		Oats.		Rape-seed.	Linseed.	Beet root.	Potatoes.	Clover.	Hay.
	Grain.	Straw.	Grain.	Straw.	Grain.	Straw.	Grain.	Straw.						
Antwerp .....	100	80	60	50	90	90	100	90	70	70	(*)	(*)	100	100
Brabant .....	100	80	60	60	90	90	100	100	80	70	70	90	100	100
Flandre Occidentale .....	100	80	60	60	90	90	100	100	80	70	70	90	100	100
Flandre Orientale .....	100	80	60	60	90	90	100	100	80	70	70	90	100	100
Hainaut .....	90	80	50	50	100	90	-----	-----	70	75	75	100	90	90
Liège .....	100	90	60	50	100	90	-----	-----	-----	-----	-----	100	60	80
Limbourg .....	90	80	50	50	100	90	-----	-----	70	75	75	100	90	90
Luxembourg .....	100	90	60	50	100	100	100	100	-----	90	-----	100	100	100
Namur .....	100	80	60	60	90	90	100	100	-----	-----	-----	90	70	100

\* Fair average.

The crop of stone fruits in all the provinces is about 75 per cent. and that of kernel fruits, particularly apples, 90 per cent. of a good average.

The herbages have been sold 15 to 20 per cent. higher than in former years, but this was exceptional and due to the complete exhaustion of the stock of last year's hay.

In all the other products of the soil of the country there is a decrease in the prices obtained, as compared with the preceding years. Most of the articles, and linseed in particular, are quoted at very low rates, it being hardly possible to obtain half the prices they brought fifteen years ago.

The demand is slow at present, but promises to be more active later in the season.

The culture of rape-seed has been almost entirely abandoned on account of the low prices obtained therefor.

Cattle are plentiful, especially young cattle, and can be had at cheap rates, in spite of the abundance and richness of the forage crop. All over the country the supply exceeds the demand, which may, in a great measure, account for the embarrassment of many farmers and leads to the belief that the consumption of meat is continually diminishing.

Some of the agriculturists have not been able to pay their rents for the past year, and will probably be behind hand also when their rents become due this year. They are suffering from the sacrifices they had to undergo on account of the severe winter. The proprietors will be wise who take heed of this unfortunate situation and be lenient with their tenants, as forcible measures would only lead to mutual injury.

The Belgian agriculturists begin to see that much time has been lost in failing to cultivate their soil to the best advantage and in not making available for culturing purposes tracts of land which have

been useless heretofore and which could be made productive by artificial means. The Government is becoming more and more interested in the efforts of the farmers, aiding them by subsidies and by the establishment of "champs d'expérience" that tend to show which soil is more adaptable for one product than for the other, and to demonstrate that wheat should not be sown where some other cereal could be raised to better advantage, and that cereals should not be sown at all upon land better adapted for pasturing purposes, and further to redeem a large portion of the prairies in the Kingdom, which are very swampy, but could by a regular system of drainage be brought into proper condition for cultivation.

The market prices of the products of the country, as quoted in the papers of the day, are as follows:

Wheat, \$3.40 to \$4.05 per 100 kilograms; rye, \$2.80 to \$2.85 per 100 kilograms; oats, \$3.40 to \$3.60 per 100 kilograms; barley, \$2.60 per 100 kilograms; rape-seed costs from \$4.35 to \$5.40 per 100 kilograms, and linseed, \$5.20 to \$5.80 per 100 kilograms; potatoes, \$1.20 to \$1.40 per hectoliter; hay, \$1.60 per 100 kilograms, and clover, 2 cents per bundle of 5 kilograms.

Oxen are sold at 14 to 16 cents per kilmogram; cows at 10 to 14 cents; heifers, 13 to 15 cents; bulls, 13 cents; calves, 15 to 19 cents.

Butter costs 25 to 27 cents per pound and eggs 40 to 44 cents per 25.

JOHN H. STEUART,  
Consul.

UNITED STATES CONSULATE,  
Antwerp, August 27, 1886.

## TARIFF OF HOLLAND.

TRANSMITTED BY CONSUL ECKSTEIN.

*Statement showing the tariff of import duties on the principal articles of commerce imported for consumption, specifying also free goods in the Netherlands, as in force in 1885.*

Articles.	Standard.	Rate of duty.
Ashes, potash .....	.....	Free.
Bark, not ground .....	.....	Do.
Beer .....	1,000 liters.	3 guilders.
Brimstone:		
Rough .....	.....	Free.
Refined .....	.....	Do.
Butter, eatable .....	.....	Do.
Cacao .....	.....	Do.
Candles, wax and stearine .....	ad valorem	5 per cent.
Carpets:		
Not stipulated .....	do	Do.
Of wool, cow's hair .....	do	Do.
Chemicals .....	.....	Free.
Clocks, gold and silver watches .....	ad valorem	5 per cent.
Coals .....	.....	Free.
Coffee .....	.....	Do.
Copper:		
Rough .....	.....	Do.
Wrought or flatted .....	.....	Do.
Brass wares .....	ad valorem	5 per cent.
Cotton, unmanufactured .....	.....	Do.
Crockery ware:		
Porcelain .....	ad valorem	Free.
Fine .....	do	5 per cent.
Pottery .....	do	Do.

Statement showing the tariff of import duties, &c.—Continued.

Articles.	Standard.	Rate of duty.
<b>Drugs:</b>		
Not stipulated .....		Free.
Cinchona .....		Do.
Cocoa-nut oil .....		Do.
Opium .....		Do.
<b>Fish-oil</b> .....		Do.
<b>Instruments (music)</b> .....	ad valorem	5 per cent.
<b>Iron:</b>		
Rough, cast .....		Free.
Wrought, band, sheet-iron .....		Do.
Rails .....		Do.
Gas-pipes .....		Do.
Iron wares .....	ad valorem	5 per cent.
Anchors and chains .....		Free.
Nails and spikes .....		Do.
<b>Lead, rough</b> .....		Do.
<b>Madder:</b>		
Alizarine .....		Do.
Unprepared, fine .....		Do.
Garancine and colorine .....		Do.
<b>Manure guano</b> .....		Do.
<b>Manufactures:</b>		
Of silk .....	Ad valorem	5 per cent.
Of cotton (rough or bleached) .....	do	Do.
Of cotton (colored or printed) .....	do	Do.
Of linen (rough or bleached) .....	do	Do.
Of sail cloth .....		Free.
Of wool, cloth, buckskins .....	Ad valorem	5 per cent.
Of wool, all others not stipulated .....	do	Do.
Of wool (blankets) .....	do	Do.
Of wool (flannels) .....	do	Do.
Knitted or woven clothes .....	do	Do.
Cotton, lace, and tulle .....	do	Do.
Passementery .....	do	Do.
Silk ribbons and bands .....	do	Do.
Cotton and linen (ribbons and bands) .....	do	Do.
Miscellany (manufactures) .....	do	Do.
Of gum elastic, bark, ironware .....	do	Do.
<b>Meats of all sorts:</b>		
Fresh or salted .....	100 kilograms.	6 guilders.
Sheep and pork flesh (fresh) .....		Free.
Sheep and pork flesh (salted) .....	100 kilograms.	1 guilder.
Sheep and pork flesh (smoked or dried) .....	do	1.25 guilders.
<b>Mercury</b> .....	Ad valorem	5 per cent.
<b>Millinery goods</b> .....	do	Do.
<b>Oils:</b>		
Salad or olive oils .....	100 kilograms.	0.55 guilder.
Of flat and round seeds .....	do	Do.
Earth and petroleum .....	do	Do.
<b>Osier or rattan</b> .....		Free.
<b>Palm oil</b> .....		Do.
<b>Paper of all sorts, hanging, packing, &amp;c.</b> .....	Ad valorem	5 per cent.
<b>Pepper</b> .....	100 kilograms.	1.50 guilders.
<b>Potato flour</b> .....		Free.
<b>Raisins</b> .....	100 kilograms.	2 guilders.
<b>Rice and rice in shells</b> .....		Free.
<b>Saltpeter:</b>		
Crude .....		Do.
Refined .....		Do.
<b>Salt, rough</b> .....	100 kilograms.	Free of import duty; 9 guilders excise.
<b>Seeds:</b>		
Rape seed .....		Free.
Linseed .....		Do.
<b>Silk, rough and unmanufactured</b> .....		Do.
<b>Soot, grease, &amp;c.</b> .....		Do.
<b>Spices:</b>		
Cassia lignea, cassia vera .....	Ad valorem	5 per cent.
Mace .....	do	Do.
Cinnamon .....	do	Do.
Nutmeg .....	do	Do.
Cloves .....	do	Do.
<b>Spelter:</b>		
Crude .....		Free.
Flatted .....		Do.
<b>Spirits (no liquors, smelling water)</b> .....	Hectoliter	Import duty 3.50 guilders and excise 60.
<b>Spirits of turpentine</b> .....		Free.
<b>Steel in staffs</b> .....		Do.
<b>Stone:</b>		
Freestone, manufactured .....		Do.
Cement, &c. ....		Do.

*Statement showing the tariff of import duties, &c.—Continued.*

Articles.	Standard.	Rate of duty.
<b>Sugar:</b>		
Unrefined.....		Free, pays excise duty.
Refined (melle).....	100 kilograms..	Excise duty, 27 guilders; free of import duty.
Refined (candy).....	do .....	Excise duty, 31.86 guilders; first-class, free of import duty.
Refined (bastards) .....		Excise duty, 28.89 guilders; second-class, free of import duty.
		Pays excise duty; free of import duty.
<b>Sirup:</b>		
Molasses .....	100 kilograms..	6 guilders.
Steam and factory implements .....		Free.
Tar .....		Do.
Tea .....	100 kilograms..	25 guilders.
Tin, rough .....		Free.
<b>Tobacco:</b>		
In leaf (American).....	100 kilograms..	0.70 guilders.
In leaf (European).....	do .....	Do.
In leaf (Java).....	do .....	Do.
In leaf (all others).....	do .....	Do.
Cigars .....	do .....	40 guilders.
<b>Wax:</b>		
Unrefined and tree wax .....		Free.
<b>Wine:</b>		
In casks .....	Hectoliter .....	Excise duty, 20 guilders; free of import duty.
In bottles .....	do .....	Do.
<b>Wood:</b>		
Timber and ship-timber (unsawed) .....		Free.
Idem (sawed) .....		Do.
Idem (all other not sawed) .....		Do.
Timber and ship timber (all others sawed) .....		Do.
Fine cabinet wood (unsawed).....		Do.
Dye-woods (unsawed) .....		Do.
Dye-woods, Brazilian and Japan .....		Do.
Dye-woods, Campeachy .....		Do.
<b>Wools:</b>		
Long-haired .....		Do.
Combing wools .....		Do.
Short-haired .....		Do.
All other shreds of wool and of woolen yarns .....		Do.
Artificial wool .....		Do.
<b>Yarns:</b>		
Of hemp for weaving (rough).....		Do.
Of hemp for weaving (bleached).....		Do.
Of flax for weaving (rough).....		Do.
Of flax for weaving (bleached).....		Do.
Of hemp and flax for sewing .....		Do.
Of cotton, not twined .....		Do.
Of cotton, twined .....		Do.
Of cotton, twined, (not bleached).....		Do.
Of cotton, twined, (colored or not).....		Do.
Of cotton on spindles .....		Do.
Of wool (rough, not colored).....		Do.
Of wool (twined, not colored).....		Do.
Of wool (twined, colored or not) .....		Do.

## NOTES.

**Fruit supplies of Lower California.**—"The average annual production of oranges in Lower California, embracing the precincts or municipal districts of La Paz, San Antonio, El Oro, Santiago, Miraflores, San José, and Buena Vista to the south of this port, and Loreto, Purificacion, San Luis, and Comondú to the north, exceed four millions.

Lemons and limes are also extensively produced to the number of about 3,000,000 per annum or more. The production kept increasing yearly until two years ago, since when large quantities of oranges and limes were introduced in the San Francisco market from Los Angeles, California, and as Florida oranges are also shipped both to the Eastern and Western States, the competing prices (not the quality) with the Mexican oranges are at such rates as to make it almost impossible for Mexican growers to ship any more of their fruits to the United States markets without incurring the risk of heavy losses. Bananas, pine-apples, and cocoa-nuts grow in this country in very small quantities, but could be greatly extended if planters could find a profitable market for these fruits.

The principal ports for shipment during the orange and lemon season are La Paz, Cape St. Lucas, and San José to the south of this port on the Gulf side, and Carmen Island for the northern districts.

The shipping months are October, November, and December. The prices for oranges packed in crates are from \$5 to \$6 per thousand, and wrapped in paper and packed in boxes from \$8 to \$10 per thousand. The prices for lemons in crates is at \$8 per thousand, and in boxes \$12.

Great specialty exists in the quality of oranges produced at San Antonio, El Oro, La Paz, and Loreto districts, they being famous for their large size and juiciness, and for their sweet-scented taste.

The annual shipments for the preceding seasons were: To San Francisco, Cal., oranges, 1,500,000; to the Eastern States, by railroad, via Guaymas, Sonora, 1,000,000; and lemons and limes to San Francisco, over 1,000,000. The losses to shippers last year were so heavy that doubts are entertained of any shipments being made during the coming season.

The facilities for shipping are good either to San Francisco by sea, or to the Western and Eastern States by railroad, via Guaymas. The rates of freight by steamer to San Francisco are \$8 per thousand or \$10 measurement ton. By railroad there is no regularity of prices per ton to any of the principal Eastern cities. The last year's shipments were made with great failure, enormous losses occurring on account of the high rates of freight charged by the connecting railroad lines.

JAS. VIOSCA,  
*Consul.*

UNITED STATES CONSULATE,  
*La Paz, July 23, 1886.*

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\* In continuation of Consular Reports No. 65, July, 1886, page 213.

**Horgen, Switzerland.**—The following trade tables were transmitted by Consul William T. Rice:

*Monthly statement showing the result attained by the engagement of a silk expert at the United States consulate at Horgen, Switzerland, from the time of his appointment up to June 30, 1886, a period of thirty-three months, giving the amount of invoices as presented, their amount after the expert's examination, the difference between the two valuations, and the gain to the revenue.*

Month.	Original amount of invoice.	Amount of invoice after examination by expert.	Difference.	Amount saved to the revenue, at 50 per cent. ad valorem.
October, 1883	\$147,355 34	\$154,504 96	\$7,149 62	\$3,574 81
November, 1883	141,952 61	151,347 99	9,395 38	4,697 69
December, 1883	158,781 63	174,928 63	16,146 95	8,073 47
January, 1884	224,375 42	244,448 88	20,073 46	10,036 73
February, 1884	183,510 26	197,715 87	14,205 61	7,102 81
March, 1884	151,744 50	164,002 82	12,258 32	6,129 16
April, 1884	99,426 69	106,242 12	6,815 43	3,407 71
May, 1884	98,068 30	105,450 43	7,382 13	3,691 07
June, 1884	99,736 31	108,254 25	8,517 94	4,258 97
July, 1884	290,847 58	324,717 63	33,870 05	16,935 02
August, 1884	178,361 93	202,864 77	24,502 84	12,251 42
September, 1884	214,731 87	243,543 41	28,811 54	14,405 77
October, 1884	180,443 99	149,372 35	18,928 36	9,464 18
November, 1884	127,533 98	143,717 60	16,183 62	8,091 81
December, 1884	235,463 88	264,767 90	29,304 02	14,652 01
January, 1885	244,040 40	277,453 33	33,412 93	16,706 47
February, 1885	203,725 41	229,485 56	25,760 15	12,880 07
March, 1885	149,376 28	166,748 19	17,371 91	8,685 96
April, 1885	123,238 72	137,731 09	14,492 37	7,246 18
May, 1885	79,750 88	90,658 77	10,907 89	5,453 95
June, 1885	119,939 14	133,936 58	13,997 44	6,998 72
July, 1885	214,023 00	235,925 05	21,902 05	10,951 02
August, 1885	167,085 59	185,567 02	18,581 43	9,290 72
September, 1885	142,416 67	166,860 70	24,444 03	12,222 01
October, 1885	90,558 52	100,255 28	9,696 76	4,848 38
November, 1885	158,694 37	175,988 10	17,293 73	8,646 87
December, 1885	202,864 14	223,732 75	20,868 61	10,434 30
January, 1886	188,925 39	209,532 61	20,607 22	10,303 61
February, 1886	160,646 04	177,926 39	17,279 35	8,639 68
March, 1886	128,963 20	143,345 34	14,382 14	7,191 07
April, 1886	107,506 80	119,371 06	11,864 26	5,932 13
May, 1886	72,956 58	82,514 66	9,557 08	4,778 54
June, 1886	117,075 78	129,586 17	12,460 39	6,230 19
	5,154,072 25	5,712,447 26	558,375 01	279,187 50

*Statement showing the value of declared exports shipped from the consular district of Horgen to the United States of America during the fiscal year ending June 30, 1886.*

Articles.	1885, third quarter.	1885, fourth quarter.	1886, first quarter.	1886, second quarter.	Total.
Silks, silk and cotton goods .....	\$562,032 64	\$505,050 60	\$499,335 55	\$354,837 37	\$1,921,256 16
Wine, spirits, and cheese .....	1,548 39	1,923 95	1,145 02	1,327 96	5,945 32
Catholic devotional articles .....	19,597 19	9,466 03	38,539 29	24,574 15	90,176 66
Miscellaneous .....	6,147 83	13,877 60	15,904 99	13,028 02	48,958 64
Total exports for fiscal year ending June 30, 1886 .....	589,326 05	530,318 38	552,924 85	393,767 50	2,066,336 78

*Aggregate value of exports during fiscal years ending respectively June 30.*

Total value of exports shipped during the fiscal year ending June 30—

1882 .....	\$2, 176, 424 29
1883 .....	2, 648, 749 44
1884 .....	2, 599, 467 43
1885 .....	2, 264, 008 39

WILLIAM T. RICE,  
*United States Consul.*

UNITED STATES CONSULATE,  
*Horgen, Switzerland, July 1, 1886.*

**Port Said.**—The following tables were transmitted by Consular Agent R. Broadbent:

*Suez Canal traffic during first half year 1886.*

Nationality.	Steamships.		Sailing ships.	
	Number.	Tons.	Number.	Tons.
British .....	1, 289	2, 107, 356. 28	1	17. 64
French .....	121	265, 916. 49		
German .....	70	95, 049. 68		
Dutch .....	65	113, 287. 06		
Austrian .....	88	60, 886. 28		
Italian .....	82	57, 287. 88		
Norwegian .....	15	20, 457. 67		
Russian .....	14	19, 162. 49		
Spanish .....	13	27, 034. 59		
Japanese .....	3	3, 502. 63		
Portuguese .....	3	1, 289. 99		
American .....	3	2, 112. 43		
Egyptian .....	2	438. 16		
Ottoman .....			1	24. 25
Danish .....	1	863. 52		
Total .....	1, 669	2, 775, 195. 15	2	41. 89

*Shipping at Port Said during first half year 1886.*

Nationality.	Entered.				Cleared.			
	Steamships.		Sailing ships.		Steamships.		Sailing ships.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
British .....	173	187, 009. 17			174	188, 174. 12		
French .....	31	42, 261. 13			31	42, 261. 13		
German .....	1	2, 295. 36			1	2, 295. 36		
Austrian .....	52	52, 999. 00	3	1, 332. 35	52	52, 999. 00	3	1, 332. 35
Italian .....			10	4, 145. 14			6	2, 399. 96
Russian .....	26	24, 686. 80			26	24, 686. 80		
American .....	1	695. 00			1	695. 00		
Egyptian .....	27	21, 810. 00	208	11, 986. 51	27	21, 810. 00	207	11, 986. 09
Ottoman .....	6	6, 751. 82	73	2, 642. 59	6	6, 751. 82	71	2, 664. 07
Danish .....	5	5, 328. 28			4	4, 240. 59		
Jerosolimitan .....			7	265. 00			6	232. 00
Greek .....	3	2, 954. 92	17	1, 345. 65	3	2, 954. 92	14	1, 230. 20
Persian .....			1	23. 00			1	23. 00
Total .....	325	346, 791. 48	319	21, 740. 24	325	346, 668. 74	308	19, 837. 67

R. BROADBENT,  
*Consular Agent.*

UNITED STATES CONSULAR AGENCY,  
*Port Said, August 18, 1886.*

UNITED STATES CONSULAR REPORTS.

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES

ON THE

COMMERCE, MANUFACTURES, ETC.,

OF THEIR

CONSULAR DISTRICTS.

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No. 70.—October, 1886.

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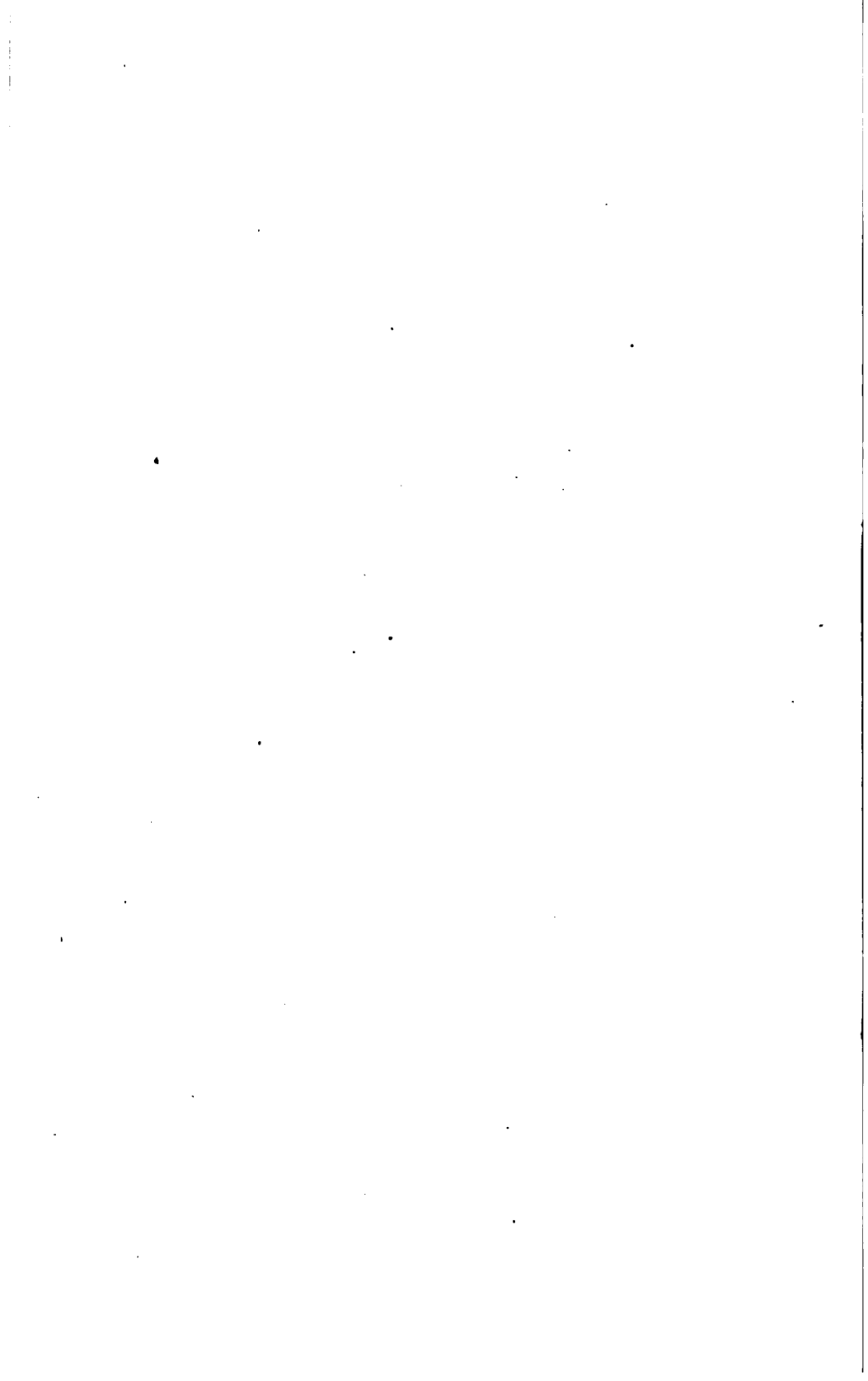
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# CONSULAR REPORTS

## ON

# COMMERCE, MANUFACTURES, ETC.

No. 70.—OCTOBER, 1886.

### COST OF SPINNING COTTON YARN.

*REPORT OF CONSUL SCHOENHOF, OF TUNSTALL.*

I could not give a better description of the cost of a cotton spinning mill and of the different items entering into the cost of cotton-spinning than by submitting the quarterly account of one of the best and latest fitted up cotton-spinning mills of Lancashire. The mill pays a profit, while most of the spinning mills are run now without this desirable result of commercial enterprise, many even with a loss.\*

\* The Royal Commission on Trade Depression in its last report publishes a statement from the Oldham companies, working under the limited companies act. Of 90 companies only 24 register a net profit aggregating about £26,000, while the remaining 66 show a loss of over £110,000. The totals given are as follows:

Total number of shares subscribed.....	951,899
Capital as per balance sheet:	
Shares.....	£3,455,676
Loans.....	3,435,427
	6,891,103
Average share money per mill.....	38,396
Average loan money per mill.....	38,171
Average capital share and loan money together per mill.....	76,567
Total balance sheet value of 90 mills.....	5,704,785
Average balance sheet value per mill.....	63,386
Total amount set aside for renewals, wear and tear, &c., of the 90 mills..	240,925
Average amount per mill.....	2,677
Total number of spindles in 90 mills:	
Twist.....	3,335,356
Weft.....	2,610,740
	5,946,096
Average number of spindles per mill.....	66,067
Average cost per spindle.....	19s. 2d.



## STATEMENT OF ACCOUNT OF A SPINNING MILL AT ROCHDALE.

*Statement of accounts, quarter ending February 27, 1886.*

Dr.	TRADE ACCOUNT.			Cr.		
	£	s.	d.	£	s.	d.
To stock November 28, 1885 .....	9,788	17	6	By sales of yarn .....	21,947	16 6
To cotton purchases during the quarter .....	16,001	14	5	By sales of waste .....	400	17 1
	£	s.	d.	By stock in trade .....	8,959	17 1
To wages .....	2,420	9	2	By transfer fees .....	1	7 0
To directors' salaries .....	40	0	0			
To auditors' salaries .....	4	0	0			
To interest on loans .....	610	11	5			
To bank commission and interest .....	18	14	5			
To insurance .....	29	6	8			
To rates and taxes .....	111	1	2			
To incidental expenses .....	18	4	5			
To carriage .....	207	19	5			
To stationery .....	4	6	0			
To stamps .....	10	9	7			
To repairs .....	68	19	10			
To skips .....	15	6	6			
To brushes .....	4	4	6			
To strapping and laces .....	13	7	6			
To roller skins and cloth .....	42	2	7			
To starch and wax .....	9	14	0			
To gas and water .....	50	9	5			
To oil and tallow .....	131	13	0			
To packing paper .....	20	7	0			
To twine and banding .....	41	9	0			
To boiler composition .....	6	7	0			
To coal .....	296	8	6			
To engine packing .....	1	11	0			
To bad debts .....	55	1	4			
To depreciation .....	800	0	0			
	5,032	8	5			
To balance to profit and loss account .....	487	2	4			
	31,309	17	8		31,309	17 8

## PROFIT AND LOSS ACCOUNT.

	£	s.	d.		£	s.	d.
To dividend on 11,980 A shares, at 6d. per share .....	299	10	0	By balance from last quarter .....	167	15	7
To balance carried forward .....	345	7	11	By trade account .....	487	2	4
	644	17	11		644	17	11

## RESERVE-FUND ACCOUNT.

	£	s.	d.		£	s.	d.
To capital account .....	750	0	0	By balance from last quarter .....	750	0	0
	750	0	0		750	0	0

Statement of accounts, quarter ending February 27, 1886—Continued.

Dr.	CAPITAL ACCOUNT.		Cr.
<i>Liabilities.</i>		<i>Assets.</i>	
To share capital, 11,980 A shares, £2 each paid up .....	£ s. d. 23,960 0 0	By depreciation previously written off: Land, buildings, &c .....	£1,480
To calls on share capital paid in advance and interest .....	2,836 2 10	Machinery .....	4,420
To loans and interest .....	80,615 2 10		£ s. d. 5,900 0 0
To sundry creditors .....	1,210 2 7		
To unpaid dividends on share capital .....	57 8 11	By land, buildings, engines, and gearing .....	36,149 9 7
To dividend payable on share capital .....	299 10 0	By less depreciation this quarter .....	200 0 0
To reserve fund .....	750 0 0	By machinery .....	34,609 17 2
To Manchester and Salford Bank (limited) .....	814 9 9	By less depreciation this quarter .....	600 0 0
To balance from profit and loss account .....	345 7 11	By accounts owing to the company .....	5,009 4 7
		By stock in trade .....	8,959 17 1
		By sundry stores, and rates and taxes in suspense .....	493 10 9
		By invested in the Cotton Buying Company (limited) .....	10 0 0
		By cash on hand .....	30 11 8
		By loan to B mill, and interest .....	28,425 9 0
	110,887 19 10		110,887 19 10

## COST OF DIRECTION.

As a rule, in English spinning mills the share capital does not represent more than one-half of the capital employed. The other part is borrowed capital. The rate of interest being a very low one at which capital can be borrowed, the excess of profit over this low interest charge consequently accrues to dividend on the shares. The companies are co operative organizations and the cost of management very moderate, as will be seen from above account, where the directors' salaries are only placed at £40 for the quarter, or £160 a year, with an annual turnover of nearly £100,000. Of the Oldham companies and their management Mr. John Kidger, of Oldham, in a statement submitted to the Depression of Trade Commission, says:

With regard to the directors, they are a persevering body of men, and a glance at their avocation shows that nine-tenths of them have practically been brought up in the business of cotton-spinning, and not a few are to-day engaged as private spinners.

It is firmly believed that Oldham companies have been beneficial to the trade of the country, because they came into existence at a time when it was of the utmost importance that the production of cotton goods should be as cheap as possible.

Private firms have not kept pace with the times, and the formation of Oldham companies stepped into the breach and took the lead, and up to now have not been displaced.

Moreover, the social condition of the people has been benefited thereby. It has taught them to save from their earnings, and to invest their small savings in the best manner possible. I know of a good many operatives who live in their own houses.

It will be seen that these companies were run under the best conditions imaginable during the past year, and yet they show so poor a result that more than two-thirds of them have on the average had a loss of nearly 3 per cent. on their share capital after the percentage for wear and tear of machinery &c., had been written off, or, in other words, have neither earned dividends nor more than a small part of the interest on loans and mortgages.

The Rochdale company under review, though not immediately a co-operative company like the Oldham companies, yet runs on nearly the same principle as to management, &c., and has the advantage of a new mill containing all the modern improvements of this very fast age of invention. In the quarter for which the balance sheet is appended a dividend of sixpence per share of £2 each was declared, or  $1\frac{1}{4}$  per cent. per quarter, i. e., 5 per cent. per annum. In the succeeding quarter, ending May 29, 1886, however, the dividend declared was only fourpence per share, or  $3\frac{1}{2}$  per cent. per annum.

#### COST OF BUILDINGS AND PLANT.

The buildings, ground, machinery, and all that belongs to a cotton-spinning mill can be supplied, as per statement above, at 19s. 2d. per spindle. Private information on this point is as follows: "Mule spinning mill can be built, complete, with engines and machinery, at between 19s. and 20s. I am told a shed can be built and fitted with cots calico looms at £12 per loom. The best calico (muslin in our language) looms to run 200 picks a minute, 40 inches reed space; cost £5 5s. each." (All weaving is done in large sheds with light falling in from the top. I have observed this in worsted, cotton, and spun-silk manufactories alike.)

#### WAGES IN THE UNITED STATES.

Wages are high, compared to the general European standard, but below the American wage rate measured by time earnings.

I submit the statement of an American cotton mill, giving the wages actually drawn, a transcript from the pay roll, prepared for me by the agent, who takes a kindly interest in these investigations. I went over this account with the manager of a cotton spinning mill in Rochdale with a view of getting the earnings of English operatives in like occupations. (The earnings of the operatives in the new mill, of which the above quarterly statement is inserted, are, however, somewhat above the earnings given below.) The annotations in the respective columns below are the result of this inquiry.

*Statement of earnings of operatives in a cotton mill in New England and in Lancashire in 1886.*

[To make weekly earnings in both instances, I have multiplied the American earnings, which were given to me in daily earnings, by six.]

Class of labor.	New England.			Lancashire.
	Average weekly earnings.			Weekly earnings.
	Male.	Female.	Children.	
Carding:				
Overseer.....	\$18 00			*\$11 19
Pickers.....	6 00			10 22
Grinders.....	8 20			8 51
Strippers.....	6 00			\$4 86 and 4 38
Drawing.....	3 90	\$3 90		4 62
Stubbers.....		6 48		3 77
Intermediates.....		6 30		3 53
Fine frames.....		5 60		3 41
Spare hand.....		4 50		3 28
Sweep, &c.....			\$2 40	

*Earnings of operatives in a cotton mill in New England and in Lancashire, &c.—Cont'd.*

Class of labor.	New England.			Lancashire.
	Average weekly earnings.			Weekly earnings.
	Male.	Female.	Children.	
Spinning:				
Overseer .....	\$18 00			\$7 29
Second hand .....	9 00			
Third hand .....	4 02			
Mule spinners .....	10 38			15 83 to 7 29
Mule doffers .....	3 78			3 65
Back boys .....			\$2 40	2 19
Sweeps, &c. ....			2 10	
Garn boy .....	3 80			
Oil and sweeper .....	3 30			2 68
Frame spinners .....		\$4 23		12 80
Frame doffers .....			2 40	2 19
Spoolers .....		5 40		3 16
Warpers .....		6 00		
Spare hand .....		4 98		
Engineer .....	13 50			8 27
Fireman .....	7 50			6 08
Watchman .....	10 50			4 86
Yard hand .....	7 50			4 38

\* Sixty-two engines, \$11.19; 40 engines, \$10.22; 27 engines, \$8.51.

† The new mill referred to gives the earnings of a mule spinner at \$14.74, out of which he pays about \$7.05 to 2 piecers, leaving him about \$7.69.

‡ For 500 spindles.

#### COMPARISON WITH BRITISH.

The earnings of 54 American weavers employed in the above-named cotton mill, all females, are stated as averaging \$5.28, while here weavers make about \$1.22 per loom per week on an average. Most of them are girls and mind three looms. In Fall River weavers tend six, and even eight looms. Mostly all spinning and weaving is done here by separate concerns, while in America the whole process of manufacturing is conducted by one and the same firm. I do not introduce here, therefore, the cost and details relating to the weaving part. To follow this up into all its minute details would require more spare time than I have at present at my convenience for purposes of so manifold an inquiry, but refer to the above only as part of the earnings in cotton manufacture from the time standard. The working time is 56 hours, against our 60 hours, which, of course, somewhat raises the corresponding time earnings of British operatives in relation to ours, and work is continuous all the year round. "I should think we have about a week's holiday in the year, or ten days at most," says my informant. Excepting times of great depression this is pretty fairly the case in American cotton mills, too. Generally speaking, then, and taking the above as a basis, a decided advantage seems to be in the hands of the British manufacturer from a competitive point of view.

(1) Cost of construction is lower.

(2) Cost of machinery is lower.

(3) Cost of management is lower.

(4) Cost of supplies, especially coal,\* which, however, is frequently offset by the saving of coal through abundant water-power in the United States.

\* At mills in Massachusetts the price of coal is given to me as \$4.75 to \$5.25 per gross ton. At Rochdale 931 tons of coal cost £296 8s. 6d., or \$1.55 a ton. (2.79 pounds of coal are used per one horse-power per hour.)

## (5) Cost of labor.

I will deal here only with the latter, and as the difference against us in time earnings is a demonstrated fact, nothing further needs to be said on the subject. Not so, however, as to the real cost of labor by the pound, which is to be set against spinning-cost.

The Rochdale mill referred to has used in the quarter ending February 27, 1886, in raw cotton 734,949 pounds, and spun it into yarn 679,528 pounds, with a wastage of 65,421 pounds, or 8.24 per cent. This yarn was from No. 28 to 40 twist or warp, and from No. 30 to 50 weft yarn, an average of 36 or 37 yarn. The labor-cost of this was 1.82 cents a pound. The additional cost to cover expenses, supplies, &c., as per balance sheet, viz, 1.96 cents a pound, added to this makes a total of 3.78 cents a pound.

The cost of spinning in this labor-cost is given below. I set alongside the price list for the Grinnell Wamsuttas No. 5 and 6, at Fall River, as in force in March of this year, and the prices actually paid in Lancashire for the same numbers of yarn. I take only such numbers out of this list as come here under review.

*Comparative prices actually paid for spinning cotton yarn in Massachusetts and Lancashire.*

Yarn.	Price in cents, Lancashire.*	Price in cents, Massachusetts.†
No. 18 yarn .....	.52	.40
No. 20 yarn .....	.50	.45
No. 28 yarn .....	.61	.64
No. 32 yarn .....	.73½	.72
No. 40 yarn .....	1.00	.98
No. 46 yarn .....	1.12	1.14
No. 50 yarn .....	1.85	1.29

\*Spindles in Lancashire, 1,630; 2,052; 2,532.

†Spindles in Massachusetts, 1,524.

From another mill in Massachusetts I have another account, which, though based on a different system of accounting, yet fully corroborates the above. Spinners (girls) are paid 90 cents a day for 896 spindles, run 10 hours. Each spindle turns out 2 pounds of No. 18 yarn a week, or 1,792 pounds, at \$540, which is equal to only .30 cent a pound. In the England and Fall River prices the spinner has to pay back boys and sweeps, which are not included in this price.

Though I have collected a sufficient number of data relating to the additional cost in yarn spinning over the price paid for spinning, yet they relate to different numbers, and are not complete enough, for American cost at least, to refer to them here. Yet from the general facts known one may say that they would not very materially alter the general result.

## LABOR-COST.

The fact is fairly well authenticated that, measured by the piece or pound price, our labor in cotton spinning and cotton manufacturing is fully as cheap as British labor, while its earnings are on an average 50 per cent. higher. Cheap production and high earnings go therefore pretty well hand in hand.

In weaving, the same can be said to result from a more thorough investigation than I have been able to bestow upon this very important and vital subject from the premises already in hand.

To give an illustration: For 64 by 64 (64 picks to the inch) Fall River print cloth is now paid, after the advance of March 1, restoring the previous reduction of 10 per cent., 18.15 cents per cut of 45 yards. For the same count of cloth the price paid in Old England is, for 80 yards, 44 cents, or about one-third more than what is paid in New England.

I have brought samples of manufactured cloths over for comparison, and endeavored to get samples of like qualities from English manufacturers for like goods, with price quotations. I cannot, however, submit them yet, as it is a very difficult matter to obtain goods manufactured in different countries alike in count, width, weight, &c. The samples received, however, do not impeach the fact, so well known to the trade, that in the coarser and heavier counts, and especially so in drills, our prices, in many instances, are somewhat cheaper than the English. Both prices, English and American, are taken in a period of trade depression, and the following remarks of a gentleman who supplied me with samples of his manufactures express about the situation in England: "You may consider that the prices are very near cost, as trade is very bad in these goods. In some cases the price may be below cost."

J. SCHOENHOF,

*Consul.*

UNITED STATES CONSULATE,  
*Tunstall, August 28, 1886.*

## COST OF THROWING AND DYEING SILK.

### REPORT OF CONSUL SCHOENHOF, OF TUNSTALL.

Macclesfield and Leek being neighboring towns of the district and centers of silk manufacture, I turned my attention to this industry after having completed my inquiries into the cost of production of earthenware, coal, ironstone, and pig-iron. As these places are not immediately connected with the potteries, however, I found the difficulties in obtaining the desired information necessarily increasing. Unless one can prosecute these inquiries on the spot, in most cases no great reliance can be placed on promises to communicate the information in writing. A promise of this kind is apt to be forgotten in the course of business activity, and unless followed up by personal requests and solicitations the labor is not one that promises quick returns, while much hesitation is shown in answering requests on the cost of production. Almost every one applied to in any branch of industry is ready and willing to give fullest information on the wages and earnings of his employes and kindred statistics. These, however, can be picked out of the prints of Government reports and the recently published volumes of the Royal Commission on Trade Depression, without necessitating leaving one's desk. But they contain no information whatever which would give the cost of production of fabrics.

Most of the testimony given before the Depression of Trade Commission explains the inability to compete in the markets of the world

in certain lines of goods by the lower wages paid by the successful competitor to his operatives. At the same time there is always data brought out which successfully combats this assumption. So, for instance, is the decline in the silk industry, especially the weaving of piece goods, ascribed to the higher wages paid in Macclesfield. I have, however, not been able to detect the production of a list of piece-work prices paid on the Continent and in England, while as a matter of fact all wages paid in silk weaving are based on piece-work prices in all countries. On the other hand, if the statements of the silk weavers who appeared before the Commission on Trade Depression are correct as to the earnings, then I cannot see that they are greatly overpaid or that they get much over what weavers earn in Crefeld, for instance, low as the earnings of the latter are.

The statements made by others of adulteration practiced to a much larger degree abroad, and of the imitation of English designs and patterns, as soon as produced, in lighter and therefore cheaper fabrics, thereby producing out of a pound of pure silk more square yards, perhaps as slightly to the eye and as heavy in weight, the difference in the weight of the pure silk and in the weight of the manufactured product being made up by loading with dyestuffs and chemicals, would certainly be more explanatory of the indisputable fact of the decline of the British silk industry than an assumption which has never been proved. It has never been proved that silk weaving is dearer in Great Britain than elsewhere, though I do not wish to say that this is not the case, because it has never been attempted to establish a comparative price list of labor, as paid by the yard or piece, for weaving silk fabrics in competing countries. But while silk weaving is on the decline, and employment scarce in weaving, and the earnings of those who have the good fortune of full employment are scanty indeed, and not much if any above the low German wages (both hand-loom weaving), the throwing of silk is fairly holding its own. Silk throwing is therefore competing with a still lower scale of wage-earners, those of Italy and Southern France, and successfully, too, else the occupation would be given up. In the throwing of silk a number of mills are operating in Macclesfield, from where I have collected information as to the cost of throwing.

The throwing is a separate trade; that is, the mill takes the silk from owners and returns it in tram and organzine at a given price for the work done. Where a weaving establishment is connected with the throwing-mill and carried on by the same firm, as by my informant, the organzine is charged to the weaving department at the rate at which the throwing is undertaken for the trade.

The charge for throwing is as follows per pound:

China floss:		
Organzine .....		\$0 85
Tram .....		73
Japan:		
Organzine .....		97
Tram .....		85
Italian:		
Organzine .....	1 09-1	22
Tram .....		97

The cost of throwing organzine by a mill handling on an average about 500 pounds of China silk a week and running about 50 weeks in the year is as follows:

*Cost of the various items of labor and mill expense in throwing 500 pounds of China silk into organzine at Macclesfield.*

Processes.	Number of hands.	Average wages paid.	Cost per pound.
			<i>Cents.</i>
Splitting .....	1½	\$2 68	.78
Winding .....	6	2 43	19.00
	44	1 74	
Cleaning .....	4	2 31	12.00
	31	1 78	
Re-cleaning .....	14	2 01	5.52
Spinning .....	12	2 43	6.00
Doubling .....	6½	2 31	3.00
Throwing .....	7	4 38	6.00
Knotting .....	4	2 19	1.78
Dramming .....	6½	2 31	3.01
Staffing .....	2½	4 86	2.13
Overlooking .....	3	5 10	3.00
Manager etc .....	1½		2.78
Mill expenses .....			8.00
Total .....	144		73

The depreciation of machinery is estimated at 10 per cent. in an annual output of 25,000 pounds of silk; rental, rates, and taxes, power, &c., at 1½ per cent. or \$1,160 a year; both items are represented in the 8 cents per pound of the above account.

In America much the same systems prevails, where mills are not so organized that they have their own throwing department. This, however, is the case very generally in the larger concerns, where the whole process, from the throwing to the finishing of the piece goods, is done by the same firm under one management. Those not possessed of throwing departments give their silk to throwsters, and from these I have the following prices as their charges for throwing silk, returning to the manufacturer the pound in organzine or tram:

	Per pound.
Canton tram .....	\$0 70
Yeatlee .....	80
Japanese and Italian .....	90 to 1 25

Those prices are nearly the same as those charged by Macclesfield throwsters, and of which the details of cost of labor are given above. For shrinkage of machinery 10 per cent. is also counted in the American price of throwing the same as above.

The weekly average earnings of operatives employed in American throwing-mills, it is safe to say, are double what they are in the above account of a Macclesfield mill, and yet the labor cost per pound is not higher than the English cost. This shows conclusively the insufficiency of the usual method applied in the great problem before us—that of measuring the cost of production by the time-earnings of operatives employed in the same industries in different countries. It will be an easy matter from the data given above—the number of pounds thrown and the number of hands employed in the work—to find like data for American throwing-mills. A comparison will undoubtedly explain the great difference in earnings, running parallel with a like cost of production, by a much greater output per capita; and data which I have in my possession bears this out very fully.



Another test of an equality in the cost of production can be found in the relative selling prices of sewing silk and floss silk. Here I found the wholesale prices, if anything, a fraction higher than in America. I have been told of attempts having been made to sell American twist in the English market. Though the quantities placed were small, yet the fact of itself ought to serve as corroborative evidence that the cost of production is not higher in America in spite of the higher earnings. In sewing silk tests of strength of length to the ounce are applied, and the endeavor to cheapen the fabric by adulteration and loading are not applicable as in broad goods, or at least are not so apt to escape detection; hence it is a better gauge for the respective price-of-labor competition than the latter are. In America these facts stated correspond very well with the wholesale selling price of sewing silk, which is about \$7 a pound in ounce spools, weight, strength, and measure guaranteed, and cheaper grades at \$6 and \$6.50 a pound, and in heavily loaded silks as low as \$4.50 a pound\*

#### THE COST OF DYEING.

After throwing, dyeing is the principal item of expense in the preparation of the glossy fiber for the weaver. In this art skill and science go hand in hand to return, for one pound, two and even three pounds of silk; an art which in reality makes two blades grow where one grew before, and which not a little baffles competitors who have not perhaps mastered it sufficiently as yet, and ascribe their inability in competition to the labor-cost. It can be easily seen that, granting all that has been said on this score as being correct, the difference in the labor-cost is neither in the throwing nor dyeing a perceptible factor, and in weaving on the day-wage theory even not very large, if applied to a yard or a pound, between German and French weavers on the one hand and English weavers on the other. In power-loom weaving, the principal method in use in America, the difference is smaller yet. Where, however, in a costly material like silk, in the organzine worth, say, \$5 a pound, taking a round figure, one manufacturer should be able at a saving of a quarter of an ounce of real silk in a yard of broad goods to produce to the eye and touch and in weight apparently as valuable a fabric as his competitor, this saving in cost would in the cheaper, plain fabrics cover the whole expense of weaving. I do not wish to dwell on this subject more than to point out of what great importance a thorough technical education to the leaders of industrial enterprises, at least, has become of late, and how those who would simply prognosticate upon the old wage theory would find themselves unable to explain many of the difficulties of the problem before them.

I have endeavored to obtain the cost of silk dyeing from one of the prominent silk dyers of Leek, where, owing to the purity of the water, certain dyeing, as the celebrated raven black, for instance, is done for the Kingdom. The great pressure, however, upon this gentleman's time

\* The price at which sewing silk is manufactured in an American mill from which I have data, for parties who furnish the raw silk to the mill and have the twist returned to them spooled and boxed, is, throwing and twisting, 80 cents; dyeing, 40 cents; spooling and boxing, &c., 50 cents; total, \$1.70. This includes profit and mill expenses, the price being the one charged for goods delivered.

In Leek, England, the items stand as follows, from data furnished me by one of the largest sewing silk manufacturers: Winding, doubling, twisting, &c., 76 cents; rent of mill, machinery, overlookers, wages, &c., 24 cents; dyeing, 44 cents. Boxing and spooling, &c., is not given in this cost, but leaving the item out and only comparing items above with same items from American mill a comparison will give \$1.20 in America against \$1.44 in Leek.

has so far made it impossible to obtain the information. Through the kindness of Consul J. S. Potter at Crefeld, who has collected a great deal of information on that point, and who put it at my disposal for the purposes of this inquiry, I am, however, able to give the comparative cost of silk dyeing from Crefeld dyers.

*Cost of dyeing silk in Crefeld, Germany, percentage of labor, of dyes and materials, and of interest on capital, taxes, &c.*

[Weight and money reduced to American.]

Colors dyed.	Cost price.	Percentage of labor cost.	Percentage of material.	Percentage of interest, taxes, &c.	Total.
<i>Unweighted.</i>	<i>Cents.</i>				
Black .....	21	25	58½	16½	100
Brown and garnet .....	27	36	47½	16½	100
Navy and sky .....	27	36	47½	16½	100
Cardinal .....	27				
Green and myrtle .....	27	28	55½	16½	100
Ponceau .....	32	25	58½	16½	100
<i>Weighted.*</i>					
Black 25 per cent. ....	37½	25	55	20	100
Black 50 per cent. ....	60½	25	55	20	100
Black 100 per cent. ....	106½	25	55	20	100
Black 150 per cent. ....	160	25	55	20	100

\*From a second dyer's statement.

The weekly wages paid dyers at Crefeld are as follows:

First master dyer .....	\$8 57
Second master dyer .....	5 71
Expert workmen .....	5 00
Common workmen .....	4 28
Apprentices:	
First year .....	71
Second year .....	1 43
Third year .....	2 14
Packing girl .....	2 62
Collector and deliverer of goods (uniform and shoes free) .....	4 64
Teamster .....	4 64
Firemen and engineers .....	4 28

*Wages paid, dyers employed, &c.*

	Total wages paid per week.	Number of dyers employed.	Average wages per week.	Annual amount of wages paid in Crefeld dyeing.	Average earnings per year.
1882 .....	\$6, 654	1, 648	\$4. 04	\$346, 054	\$209. 98
1883 .....	6, 828	1, 736	3. 93	355, 068	204. 64
1884 .....	7, 128	*1, 748	4. 08	370, 702	211. 60

\*Includes 350 apprentices.

The prices charged to manufacturers for dyeing are for ordinary colors, pure dye 32 cents a pound (3 marks per kilogram).

Silk dyeing is much subdivided in small lots to make up combinations in Crefeld as well as in Leek, and, though costing more to dye, is charged alike at an average price to manufacturers.

\*And one-fourth cent commission per pound.

Macclesfield manufacturers pay for dyeing at the following rates: For black dyeing weighted to 20 ounces, 96 cents, less 25 per cent., or net 72 cents a pound. For ordinary colors (excepting white and very light colors), 52 cents, less 25 per cent., or net 39 cents a pound.

Now, silk dyeing in New York, where much dyeing is done for manufacturers, is charged at the following rates: Plain dyeing, in small lots, unweighted, regular price, 35 to 50 cents a pound; large lots average 35 cents a pound, less 5 to 10 per cent. discount. Weighted colors, black, 24 ounces, 85 cents; colors, 16 to 24 ounces, 85 cents to \$1.10.

Home competition has brought down the price of dyeing to so low a point in New York that much complaint has been expressed to me by dyers. But the fact remains that it is done as cheaply as in Crefeld or Leek, so that virtually no difference exists in the cost of production in the two primary labor processes in silk manufacture, *i. e.*, throwing and dyeing between Macclesfield and Crefeld on the one hand and America on the other.

## LABOR AND WAGES IN MARSEILLES.

REPORT OF CONSUL MASON.

### I.—AGRICULTURE.

By reason of the rocky, broken surface of Southern France, the long droughts of summer, and the large proportion of mountain land in the departments of Var, Bouches-du-Rhône, Ardèche, Basses-Alpes, and Drôme, which is totally impracticable for farming or grazing purposes, agriculture in this immediate neighborhood is confined almost exclusively to the valleys, or the lower hill slopes, which are more or less susceptible of irrigation.

Farming in such a country is necessarily on a small scale, and with methods and implements so rude and primitive as to have but little value as the basis of any comparison with the agriculture of the United States.

But this consular district includes also the departments of Pyrénées Orientales, Hérault, Vaucluse, and the rich level region of Arles, in the lower valley of the Rhone, where the soil is fertile, easily tilled, and is, moreover, worked in farms sufficiently large to require hired labor and the use, to some extent, of modern implements and methods. It is to this latter region that this portion of the present report will be mainly confined.

The arable land is generally sandy, often with a large admixture of gravel. It is usually farmed by the proprietor, in tracts varying from 5 to 150 acres in extent, the average being perhaps 10 acres. The crop was mainly wine until the phylloxera destroyed the vineyards of Southern France, although wheat, peas, lentils, and various root crops were grown to some extent. The destruction of the vines greatly increased the acreage of wheat and barley, but all cereals and roots are so much less profitable than wine that during the past six years there has been going on a steady process of restoring from one-third to half the area of most farms to vineyards by the use of American grape roots upon which French varieties of wine grapes are grafted.

Very little farming land is leased for a fixed cash rental. It is either occupied and worked by the proprietor himself, or, if leased by a ten-

ant, the rent is paid by a return of half the crop produced. As nearly as can be estimated, the average rental would be equal to \$12 per acre per year. Leases of farms are usually for terms of six, nine, and twelve years.

#### AGRICULTURAL LABOR.

The conditions of labor create two classes of farming hands—those who serve by the year, and such as are employed by the day or week during the busy seasons of planting and harvesting.

Laborers who work by the year, and live upon the farms which they help to till, receive from \$5 to \$9 per month, with board and lodging; \$7 per month would be a fair average for the wages of this class.

Male laborers hired by the day are paid about 45 cents per day in autumn and winter, when days are short, and 55 to 60 cents per day in spring and summer. The wages of women are half the above rates. In certain skilled labor, such as grafting vines, a good workman can command, during the brief season of such employment, 80 cents or even \$1 per day.

The ordinary day's work of farm laborers in this region does not exceed seven hours. In most cases they are in the field nominally from sunrise until sunset—say an average for the year of twelve hours—but they are allowed three rests, of an hour to an hour and a half each, for breakfast at 9 a. m., dinner at 12, and luncheon at 4 to 5 p. m., so that the actual day's labor, except during the hurried season of planting and harvest, is only seven hours. Even then the Provençal agriculturist labors with the placid deliberation of a man working against time, rather than with the purpose of finishing his task as well and quickly as possible.

The tools used are plows of various patterns, from the primitive wooden, one-handed implement, shod with wrought iron, to modern cast-iron and steel plows made in England or in Central and Northern France. Hoes are large, heavy, and with us would be considered rude and awkward. On very small farms and in rough, rocky ground these hoes are used instead of the spade or plow to turn up the soil preparatory to planting. For cultivating vines the hoe and a long-handled, sharp-pointed shovel are employed, as well as cultivators and small plows, which are used precisely as the same implements are employed in America for cultivating Indian corn.

Wheat is harvested either with a sickle, a two-fingered "cradle," or is mown close to the ground with a short, broad grass-scythe set on a straight "snath," the handles of which are long and crooked to compensate for the absence of curve in the snath itself.

On a few of the larger farms in the neighborhood of Arles and Montpellier, some of which are owned by wealthy men living in cities, English and French copies of American mowing machines are used, but generally speaking this is not a country of meadows or grass. Occasionally one of these is a combined machine, and is used as a reaper for wheat and barley. One likewise sees frequently the two-wheeled horse-rake with steel-wire teeth; but all these are exceptional, and as a principle it may be said that the farm work of Southern France is done by hand. Thrashing is done by three methods—the flail, or by tramping with horses and hauling a heavy stone roller over the sheaves spread on a smooth, hard piece of ground, or by horse-power thrashing machines. The latter are made in England and France, and are usually limited to the simple toothed cylinder, which thrashes without separating the grain from the

chaff and straw. In the hill districts, where water-courses abound, these thrashers are sometimes established with water-power, the wheat being brought in by the farmers of an entire neighborhood to be thrashed, as the same farmers would take grists to a mill. I have seen in the department of Hérault one American combined thrasher and separator owned by an association of farmers, but in general this is too costly a machine for France, where human labor is the cheapest element in the problem of production, and where agriculture, like everything else, is managed with the most rigid economy.

#### SUBSISTENCE.

The food of farmers and their workmen is simple and monotonous. Bread, vegetable soup, and wine, the first dark and coarse, the latter worth from 30 to 50 cents per gallon, are the essential elements. To this are added potatoes, beans, peas, lentils, cabbage, and other vegetables grown on the premises. Very little meat is eaten except on Sundays and fête days, when a little pork or mutton is used as a luxury.

Beef, fish, and preserved meats cost from 20 to 60 cents per pound, and are therefore practically out of reach of the agricultural laborer. Bread costs 3 cents per pound; coffee, 35 to 50 cents; sugar, 10 to 12 cents. Sirup, tea, and butter are not used to any extent by the peasantry.

A farm laborer's domicile includes from one to three rooms, according to the size of his family. When employed by the year his room or house is provided by his employer; in other cases \$40 per annum would be a fair average rent for his habitation.

#### COST OF PRODUCTION.

The principal cereal of this district is wheat, and from careful inquiry and comparison I find the cost of labor required to produce a hectoliter of wheat to be in average seasons 10 francs; that is, \$1.93 for 2.84 bushels, or about 70 cents for each bushel of wheat, which is worth in the present market about \$1.50.

Under the present tariff law of France there is an import duty of 27 cents per cwt. on wheat and 54 cents per cwt. on flour. There is no internal-revenue tax on farm products, but there is a "*foncier*" or land-tax, which is paid by the proprietor, and when leased the tenant pays besides as tax a certain percentage of the amount of his rental.

All these taxes are variable, the rate being fixed by the governments of the state, the department, and the commune each year, in accordance with the requirements of the treasury. The tenant's tax is scaled like an income tax, with an increasing percentage as the amount of rent paid exceeds certain specified limits. Thus a tenant who pays 1,000 francs per annum as rent for his farm is subject to a larger percentage of tax on this amount than his neighbor who pays only 500 francs or less.

In the production of wine, the other great staple of Southern France, the cost of labor per hectoliter of 26.42 gallons is \$3.86, or 14½ cents per gallon. This is for the ordinary red wines of the country, which are worth, as they come from the press in the vintage season, from 30 to 40 francs per hectoliter, or 22 to 30 cents per gallon. This proportion of the cost of labor to the quantity, and therefore the value of product, varies of course somewhat with the age of the vineyard and its consequent productiveness, but the figures given are the average of all

ordinary vineyards, and fix the cost of labor in producing ordinary wines at about half the value of the crop in its first and lowest condition for market.

Wheat is ground throughout Provence at local mills or in the cities, where both steam and water power are used.

France imports annually to supply the deficit in the home product from 30,000,000 to 70,000,000 bushels of wheat, so that it may be said in effect that the whole of the wheat crop of this country is consumed at home.

Wines are exported from this district to nearly all civilized countries, but they are largely of the manufactured qualities, which are prepared by mixing native wines with stronger varieties which have been imported from Italy or Spain.

Grains and wines when transported by rail are subject to the following tariff of freights, which applies to all lines of the Paris-Lyons-Mediterranean Railway Company:

Distance.	General tariff for quantities less than one ton, based on the following rates per ton per mile.			Special tariff for quantities of one ton or more, per ton per mile.		
	Cereals.	Wines.		Cereals.	Wines.	
		In cases.	In casks.		In cases.	In casks.
	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
15 miles and less.....	3. 107	4. 349	3. 727	2. 485	3. 107	2. 796
16 to 18½ miles .....	3. 107	4. 349	3. 727	1. 553	3. 107	2. 796
19 to 62 miles .....	3. 107	4. 349	3. 727	1. 320	3. 107	2. 796
63 to 124 miles .....	3. 107	4. 349	3. 727	1. 320	3. 107	2. 485
125 to 186 miles .....	2. 796	4. 039	3. 416	1. 243	2. 796	2. 485
187 to 248 miles .....	2. 796	4. 039	3. 416	1. 009	2. 796	2. 019
249 to 310 miles .....	2. 485	3. 727	3. 107	1. 009	2. 485	2. 019
311 to 372 miles .....	2. 174	3. 416	2. 796	1. 009	2. 174	2. 019
373 to 434 miles .....	1. 864	3. 107	2. 485	1. 009	1. 864	1. 553
435 to 496 miles .....	1. 553	2. 796	2. 174	0. 982	1. 553	1. 243
497 to 558 miles .....	1. 243	2. 485	1. 864	0. 777	1. 243	1. 243
559 to 621 miles .....	1. 243	2. 174	1. 553	0. 777	1. 243	1. 243
622 miles and over .....	1. 243	1. 864	1. 553	0. 777	1. 243	1. 243

Shipments of wines in casks, in quantities of 5 tons, or paying for such quantities, are allowed the following reduced rate per ton: Up to 93 miles, 2.485 cents per mile; from 94 to 186 miles, 2.175 cents per mile; 187 miles and upwards, 1.243 cents. To these rates are to be added costs of handling charged by the railway company, as follows: 29 cents per ton for shipments of less than 4 tons, and 19.3 cents per ton for shipments of 4 tons and more.

There exists also a special rate for transportation of quantities of cereals, not less than 5 tons, to Paris and certain stations on the frontier, viz:

From Marseilles to—	Per ton.
Paris .....	\$5 40
Vesoul }	
Belfort }	4 63
Gray .....	4 25
Auxonne.....	4 05
Vilars .....	3 86

## II.—MINES AND THEIR PRODUCTS.

## TENURES AND ROYALTIES.

All mines in France are held to be state property, although they are in no case worked by the Government. The system in force is as follows: Any individual, or corporation, desirous of engaging in mining operations, must first obtain from the proprietor of the land permission to undertake "*travaux de recherche*," exploring operations, at the cost and risk of the applicant. If the results obtained by these preliminary tests are satisfactory, a formal application for a final concession is made to the ministry of public works. After an inquest conducted by the civil authorities, and upon favorable advice reported by the Government engineer, this "concession" is granted by the minister of public works, and gives a perpetual tenure to the applicant, who can then work, sell, or transfer the mines, which are thenceforth his property.

Once in possession of his "concession" the grantee has entire command of the produce of the mines and is at liberty to conduct works as best adapted to his means or judgment, under the control of the Government and the surveillance of a state engineer whose business it is to observe the progress of the works and see that nothing is done contrary to the law, to the safety of the people employed in the mines, or to the lawful rights of the owners of other mines or the proprietors of the soil.

As above stated, the tenure is perpetual, and subject to no rent or royalty except a fixed annual fee of 10 centimes per hectare (a little less than 1 cent per acre) for the area included in the concession, and a royalty tax of 5 per cent. of the net profits. These, with an additional tax of 10 per cent. of the aggregate amount of the above fee and royalty, are paid to the French revenue. The owners of the soil are entitled to nothing excepting the rent of such parts of the surface as are required for the proper working of the mines, the nominal fee of 10 centimes per hectare if they see fit to claim it, and compensation for any damage occasioned on the surface, which is paid at double its actual value.

## KIND OF ORES EXTRACTED.

With the exception of coal, this consular district includes but few mines, which are mostly situated in the department of Gard, and produced in 1884:

(a) 70,820 tons of hydroxide of iron, containing about 42 per cent. of metal, extracted from nine different mines, which are worked on the most simple and economical principles, by means of horizontal galleries opening into the sides of the mountains. The ore is sold for an average price of \$1.43 per ton at the mines, and is nearly all smelted at furnaces in the same department. The cost of production, as to labor, can be deduced from the following table:

Place of labor.	No. of men.	No. of days.	Wages paid.
In the mines .....	189	50,844	\$44,115 56
Outside .....	158	29,938	22,965 46
Total .....	347	80,782	67,081 02

It is thus seen that the cost of labor for each ton of ore sold at \$1.43 per ton amounted to 95 cents.

(b) The iron-pyrite mines of the Gard yielded, in 1884, 24,863 tons, which were sold at \$2.55 at the mines, and mostly shipped to sulphur refineries at this port.

Place of labor.	No. of men.	No. of days.	Wages paid.
In the mines .....	126	26,359	\$26,425 63
Outside .....	54	12,133	7,025 39
Total .....	180	38,492	33,451 02

Cost of production as to labor, \$1.31 per ton.

(c) The production of lead and zinc is very small, and aggregated not more than 364 and 1,167 tons, respectively, in 1884. This product has been considerably reduced, particularly in respect to zinc (which amounted formerly to 13,000 or 15,000 tons), in consequence of the heavy depreciation in the prices of these metals.

(d) There were also extracted from the department of Gard 4,179 tons of bitumen and asphaltum, which sold at an average of \$3.47 per ton.

#### COAL MINES.

We now come to the study of the coal mines, which in the department of Gard are second to none in France, and afford a complete illustration of the mining system of this country.

There are in that department twelve mines, which, in 1884, yielded 1,878,179 tons, sold for the aggregate sum of 23,878,718 francs, or an average of \$2.47 per ton as taken from the mines.

Place of labor.	No. of men.	No. of days.	Wages paid.
In the mines .....	7,638	2,249,961	\$2,009,832 10
Outside .....	4,485	1,348,921	840,605 22
Total .....	12,123	3,598,882	2,850,437 42

The cost of production, as regards labor, is \$1.51½ per ton.

The above was the output of twelve companies, but was furnished mostly by the two leading companies in two districts, viz, that of the "Grand Combe," with a production of 731,500 tons, and "Bessèges," with 451,416 tons.

#### METHOD OF WORKING.

As has been stated, the grant of mining property in France is perpetual, and the works are conducted under the control of the Government. For both these reasons the working may be said to be more expensive, but it is at the same time more regardful of the future.

Two perpendicular shafts are generally sunk, one at either end of the concession. These shafts are of various depths; the deepest in the district is 500 meters, or 1,640 feet, but the average is not more than half that depth. The shafts are connected by galleries cutting across the various veins of coal, and from which branch off, right and left, the "*chantiers d'abatage*," or entries. These entries follow the various veins in a slightly sloping direction, so that the coal may be easily run down to the main galleries, which are provided with two small railways,



by which the coal is transported to the shaft, and there raised to the surface by a lifting machine operated by steam-power. As not more than one ton at a time can be lifted through the shaft, some of the extensive mines also extract their coals by means of inclined planes, over which trains of eight or more cars are hauled.

In all parts of the mines the roofs of the galleries are supported by timbers and cross-timbers, and the "gobbing," or filling the empty space from which the coal has been extracted, is done mostly with material brought from outside, the cost of working being thus materially increased.

#### DIFFICULTIES OF WORKING.

These are few. Fire-damp, although sometimes encountered in the mines of the Gard, is not in sufficient quantity to create any serious danger, against which the usual precautions are nevertheless strictly observed. There is no great annoyance from water, which, when it occurs, is forced out of the mines by means of pumps of moderate power. The greatest disadvantage of the Gard mines lies in the irregularity of the coal veins, which are either too thick and necessitate considerable and costly gobbing, or too thin, and require much cutting through worthless rock to obtain a small percentage of coal. Thus, some of the veins in the Grand Combe mines range from 26 to 32 feet, while those of Bessèges are ordinarily not more than  $1\frac{1}{2}$  to 2 feet thick.

#### QUALITY OF THE COAL.

The coals extracted from the Gard mines are generally poor in volatile matter, and therefore less desirable for the manufacture of gas than English coals. The city of Nîmes, which is but a few miles distant from the mines, imported last year 2,405 tons of English coal for the use of its gas-works.

They are likewise somewhat schistous, and the "slack" must undergo a slow and rather costly process of washing.

Their friability necessitates great care in the handling, and they are generally placed in the cars by hand "like eggs," said an engineer. The great quantity of coal-dust resulting from this friability is turned to advantage in the manufacture of "*agglomérés*" or "*bricquettes*;" that is, coal-dust mixed with coal tar and compressed into the shape of bricks or short rolls, which are growing daily in favor, and are now exclusively used by the railway companies and largely by steamships as a steam-fuel. This manufacture of bricquettes consumes about one-fifth of the entire coal product of this district.

#### COMPETITION OF ENGLISH COALS.

All that has been said in respect to the coals of this district will show the numerous disadvantages under which they labor in competition with English coals. The protection afforded by the French tariff, which is only 1.20 francs, or 24 cents per ton, is insignificant, particularly since the depression of marine freights has enabled British exporters to send to this port steamers laden with from 2,000 to 3,000 tons of coal at the reduced freight of from 10 to 12 francs per ton; that is, only 2 or 4 francs per ton more than the freight by rail from the Gard mines to this city, which costs from 8.50 to 9 francs per ton for a distance of 106 miles.

The importation of English coals has accordingly increased from 38,977 tons in 1872 to 319,318 tons in 1883. This amount fell in 1884 to 256,987

tons, but for no other reason than the general stagnation of business during the cholera epidemic.

The receipts of French coals, on the contrary, have decreased from 772,000 tons in 1872 to 584,000 tons in 1883.

This condition of affairs is regarded with deep concern, and the manager of the most important mine in the Gard, looking, after the French fashion, for assistance from the national Government, moved in the council-general of the department that the rate of transportation by rail from the mines to Marseilles be reduced from 1.351 cents per ton, and per mile to .994 cent; that the special rate on coal for exportation be reduced from .93 to .79 cent, and, finally, that a bounty of 1.20 francs, or 24 cents per ton, equal to the duty levied on imported foreign coals, be granted for every ton of French coal exported.

The only countries to which coal was directly shipped from the mines in 1884 were Spain, which received 47,331 tons, and Italy and Switzerland, where 20,558 and 26,804 tons respectively were sent.

All the mines of the Gard, save one, have combined with a view to promote the exportation of their coals, and formed a syndicate at Marseilles, which has the exclusive management of all the export trade. The German railways having granted a freight tariff of .714 cent per ton per mile threaten to crowd out of the Swiss market the coals of this district, which pay .994 cent per ton per mile, a difference which their acknowledged superiority over the German coals is not sufficient to offset.

The following schedule of transportation rates as applied to different districts by the Paris-Lyons Mediterranean Railway Company will exhibit some of the peculiarities of the French system, and show the ground upon which some of the complaints of the Gard mines are based:

*Transportation rates per ton per mile in the mining districts of Loire, Saone and Loire, and Gard.*

Distances.	Loire.	Saone and Loire.	Gard.
	Cents.	Cents.	Cents.
Up to 63 miles .....	1.553	1.366	1.957
64 to 93 miles .....	1.553	1.366	1.568
94 to 124 miles .....	1.304	1.304	1.49
125 to 155 miles .....	1.274	1.118	1.49
156 to 186 miles .....	1.210	0.87	1.43
187 to 248 miles .....	0.993	0.87	1.248
249 to 310 miles .....	0.90	0.87	1.118
Over 310 miles .....	0.776	0.87	0.982

#### WAGES OF LABORERS.

In all the mines and extensive works of the Gard the principle is to pay the workmen not by the day or the week but by the job. This system naturally involved a great variation in the prices agreed upon, according to the nature of the work, and also in the earnings of the operatives.

Miners are paid by the car-load, containing from 800 to 900 kilograms, or 1,650 to 1,900 pounds of coal, at the rate of from 30 to 80 cents per car for coals in lump, and from 16 to 30 cents for "slack."

The extensive timbering which is required by law in French mines is paid for at the rate of 15 cents for a complete trestle or support, and from 6 to 10 cents for replacing any part of such trestle.

The "gobbing" is generally rated at 40 centimes per cubic meter, say little more than 6 cents per cubic yard.

Work in the rock is necessarily performed under other conditions, and pays the miner from \$4 to \$20 for each longitudinal meter of advancement in the gallery.

It is clear that under this system, where so much depends on the ability and industry of the miner, and on the nature of the work in which he is engaged, it is difficult to establish even an average of his earnings, which may vary from a mere nominal sum to as much as three dollars per day. As an illustration of the very striking variety of results realized in the different mines by reason of the diverse conditions under which the labor is performed, the "Compagnie de Terre-Noire, la Voulte, et Bessèges," which owns four mines in the same region, furnished the following figures, showing the minimum, maximum, and average production of coal per annum for each miner employed inside its mines:

Locality.	Minimum.	Maximum.	Average.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Salle.....	229	405	317
Travers.....	111	252	182
Lochule.....	462	521	491
St. Florent.....	190	210	200

The "Compagnie Houillère de Bessèges" reports 263 tons as the average annual product of each miner employed inside its mines at Bessèges.

The figures given in the beginning of this report as to the total amount of wages paid in the different mines of the Gard set the general average for all hands employed at 90 cents for each day of 10 hours' labor inside the mines and at 63 cents for the same amount of work outside of the mines.

#### RELATIONS OF EMPLOYERS AND EMPLOYÉS.

These relations are, as a rule, most satisfactory, and it must be said, in justice to the mining companies of this region, that they do all in their power, frequently at the cost of heavy pecuniary contributions, to promote the moral and physical welfare of their employés. Most of these companies have built and maintain on their grounds hospitals, churches, and school-rooms, open free of any charge to the workmen and their families. Medical assistance is also furnished *gratis* by a number of physicians in the service of the companies.

Relief and pension funds have been created, which insure the miner against utter destitution in case of illness or when old age makes it impossible for him to earn a living. The pensions awarded after the age of 55 and a period of service ranging from twenty to thirty years are 600 francs (\$115.80) and upwards for the miners, and for clerks one-third of their salary. The relief granted in case of illness varies from 20 to 30 cents per day, exclusive of the cost of medicine, which is paid from the relief fund.

These funds are supplied on the part of the employés by a deduction from their wages of 2 per cent. in some companies and 3 per cent. in others for the relief fund, and of 1 per cent. for the pension fund. Only

the first part of these taxes is compulsory, but the companies always pay into both these funds contributions equal to those of the employés, or a certain percentage of the net profits of the year. The management is intrusted to a committee of workmen elected by their comrades, the chairman being the only member appointed by the company.

With a view to promote economy among their workmen, the companies also receive their surplus earnings as deposits, on which they allow a more liberal rate of interest than the national savings banks. Lastly, the operatives of the mines may find in stores kept and supplied by the several companies all the necessaries of life, which are sold to them at a very small profit, barely sufficient to cover the cost of management. In some cases the goods are sold at the same rates as in large towns, but the profits are distributed at the close of each year among the men who have bought from these stores in proportion to their expenditures.

All these "liberalities," as they are properly called, cost, during the year 1884, one of the companies, that of Bessèges, which employs 3,000 hands, a sum of 120 francs (or nearly \$24) per capita. The fuel supplied gratis was valued at 104,808 francs or \$20,228.

With all the advantages thus offered to them, it would seem that the miners of this region should be able to make some saving from their annual earnings. A few of the more industrious and frugal do so, but as a rule the miners of the Gard and their families spend their wages as fast as they are earned. The Bessèges company had on deposit at the end of the year 1884 a total sum of 558,658 francs (\$107,821) to the credit of 270 depositors.

The cost of food, rent, lodging, &c., applies equally to miners and to the workmen at the coking furnaces and the iron and steel works in the same districts. The living-expenses of the miners will therefore be considered in the general table devoted to that subject in the subsequent division of this report on smelting and iron manufacture.

There are in this department of Bouches-du-Rhône four mines of lignite coal, which in 1884 employed 2,415 hands, and produced 403,486 tons. This kind of coal commands in this market prices varying from 16.50 to 22 francs per ton (\$3.18 to \$4.25), say, on an average, \$1 less per ton than the bituminous coal of the Gard. The working of these mines is greatly embarrassed by the invasion of water, which, notwithstanding the constant use of powerful pumps, frequently floods certain parts of the mines, and suspends their working for months. To obviate this, and also to provide a cheaper mode of transportation to Marseilles, it has been decided to cut from the mines to a point on the sea-shore near this city a subterranean railway gallery through which the water will be drained from the mines and the coal brought to this port. When completed this tunnel will be about 9 miles in length.

### III.—SMELTING AND IRON MANUFACTURE.

The smelting and other processes of iron and steel manufacture in this district are, like the coal mining, confined mainly to the department of Gard. There is at Marseilles one blast-furnace which is operated by the gas company of this city, which utilizes for that purpose the coke produced by the manufacture of gas. The management refuses all information or admission to its works, so that the only fact that could be ascertained is that it produced from Italian, Spanish, and Algerian ores 15,065 tons of pig-iron in 1884.

In the department of Gard there are three large establishments, located respectively at Bessèges, Tamaris, and Beaucaire. Their equipment includes the following machinery :

Equipment.	Bessèges.	Tamaris.	Beaucaire.
Smelting furnaces .....	4	6	3
Puddling furnaces .....	22	25	3
Bessemer steel furnaces .....	4	2	3
Carbonizers .....	6	2	3
Siemens & Martin steel furnaces .....	4	2	2
Trip-hammers .....	4	5	4
Trains of rolls .....	5	6	37
Steam-engines .....	52	33	2, 200
Aggregate horse-power of engines .....	2, 673	1, 368	

The material employed is coal and coke from the neighboring mines, and the native ores mixed with various imported ores, as follows, the figures given showing the amount of each kind imported for these works in 1884:

Whence imported.	Articles.	Quantity.
		<i>Tons.</i>
Spain .....	Hydroxide iron ore .....	5, 763
Greece .....	Manganiferous iron ore .....	11, 254
Russia .....	do. ....	1, 642
Italy .....	Glance .....	3, 445
Algeria .....	do. ....	475
Total .....		22, 579

The fluxing material used is a species of native limestone called "castine." The native coal is strongly impregnated with sulphur, and requires to be coked before it can be used for smelting, but the coke thus produced is of excellent quality for that purpose.

*Product of the department of Gard during 1884.*

Articles.	Quantity	Value.
	<i>Tons.</i>	<i>Per ton.</i>
Pig iron .....	92, 784	\$17 22
Blooms & .....	8, 547	27 24
Ferromanganese .....	1, 787	61 44
Spiegel-iron .....	8, 701	25 30
Bar-iron, plates, &c .....	18, 438	40 36
Iron rails .....	334	38 93
Bessemer-steel rails .....	43, 374	36 23
Martin & Siemens rails .....	9, 479	30 19
Bars Bessemer steel .....	260	45 33
Bars Martin & Siemens steel .....	3, 798	45 29

The pig-iron and steel produced in the department were therefore nearly all worked up in the same district, only 82 tons of pig-iron and 3,714 tons of steel blooms having been shipped to other districts. These statistics show a decline of from 10 to 20 per cent. since 1880 in all the above classes of products.

The following table shows the minimum, maximum, and average product in tons produced per year of 300 working days by each workman employed by the company of Terre Noire, la Voulte et Bessèges, in the various leading processes of iron and steel manufacture:

Processes and products.	Minimum.	Maximum.	Average.
Carbonisation .....	478	689	583
Blast furnaces (pig-iron) .....	158	252	205
Bessemer steel .....	217	389	308
Siemens & Martin steel .....	109	204	156.5
Foundry (castings) .....	31.7	88.8	55.2
Puddling (puddler and helper) .....	600	650	625
Bolts, nuts, rivets, &c .....	\$715 61	\$1,225 28	\$970 45
Machine-shops .....	814 55	1,127 67	971 11

### WAGES AND EXPENSES OF LIVING.

The condition of the workmen in the iron and steel industries of this district, like that of the coal miners, has been generally comfortable and satisfactory until the depression of the past two years has diminished somewhat the demand for their labor. From the records of the works at Bessèges, Tamaris, and Beaucaire, it appears that the average monthly earnings of the different classes of employés are as follows:

#### *Average monthly wages.*

Class of labor.	Wages per month	Class of labor.	Wages per month.
<i>Mines.</i>		Heater steel .....	\$38 07
Coal digger .....	\$25 09	Heater steel helper .....	25 09
Coal sifter .....	23 16	Heater Siemens & Martin furnaces .....	28 95
Trestle and track layer .....	22 17	Heater Siemens & Martin furnaces helper .....	22 17
Car driver .....	19 30	Muck roller .....	28 95
Outside hands .....	19 25	Blacksmith .....	26 05
<i>Smelting furnaces.</i>		Rail finisher .....	24 89
Smelter (Ponsard furnaces) .....	33 17	Fitter .....	24 12
Smelter (Ponsard furnaces) helper .....	25 09	Molder .....	23 64
Smelter (Siemens-Martin furnaces) .....	32 81	Pattern-maker .....	31 71
Smelter, ordinary .....	30 40	Turner .....	22 17
Smelter, ordinary helper .....	21 71	Rail-borer .....	21 23
Coal and ore heavers .....	22 17	<i>General work.</i>	
<i>Iron and steel workers.</i>		Blacksmith .....	23 16
Rolling hands—iron and steel .....	40 53	Carpenter .....	23 16
Puddler .....	41 68	Fireman .....	23 16
Puddler helper .....	24 12	Bricklayer .....	22 17
Heater iron .....	36 67	Gas fitter .....	21 61
Heater iron helper .....	25 09	Machinist .....	21 28
		Journeymen employed in the handling of material .....	\$19 30 to 22 17

The expenditures of a workman and his family for food, wine, and other necessities are governed to a large extent by the amount of his wages. They can live on bread, potatoes, and a little wine, but when work is constant and wages good they increase their allowance of wine, and include coffee, meat, eggs, cheese, olive oil and other articles among their daily supplies. A fair average example will be found in the following schedule of household expenses of a workman of good character

and temperate habits, with a wife and three children, during the month of September last :

Items of expense.	Cost.	Items of expense.	Cost.
Rent of two rooms and a cellar.....	\$2 50	Vegetables .....	\$0 43
Lamp oil or benzine.....	24	Soap .....	79
<i>Food.</i>		Salt, pepper, vinegar.....	19
Bread.....	4 00	Wine, 12 quarts.....	1 28
Cheese.....	20	Brandy, 1 pint.....	43
Olive oil.....	77	Sugar.....	1 45
Coffee.....	68	Miscellanies.....	90
Milk.....	59	Total per month .....	23 89
Potatoes.....	42	For the year.....	260 08
Mutton.....	6 75	Family clothing.....	85 00
Bacon.....	1 28	Total.....	365 08
Eggs.....	48		

### PRESENT CONDITIONS AND PROSPECTS.

From the foregoing facts and statistics it will be readily inferred that the mining and iron industries of this district are in a depressed and unpromising condition. France, like some other countries, finds the capacity of her iron works in excess of the home demand for their products. Several years ago M. de Freycinet proposed an extensive scheme for developing the railway and canal systems of this country to the high standard which has been attained in England and Belgium. The plan was adopted, and, in anticipation of a greatly increased demand for rails and machinery, new iron and steel works were projected at various points by stock companies, whose shares were negotiated in the Paris market. Want of funds eventually defeated the full realization of the scheme, and the increased manufacturing capacity became superfluous and unprofitable.

The Government has protected the metal industries by the following import duties :

Article.	Duties.	Article.	Duties.
	<i>Per ton.</i>		<i>Per ton.</i>
Pig-iron .....	\$3 86	Steel bars .....	\$17 37
Iron bars .....	10 58	Steel sheet, black, more than .039 $\frac{1}{2}$ inch	17 37
Iron sheet more than .039 $\frac{1}{2}$ inch thick....	14 48	Steel sheet, black, less than .039 $\frac{1}{2}$ inch..	28 95
Iron sheet less than .039 $\frac{1}{2}$ inch thick .....	19 30	Steel sheet, white.....	28 95
Steel rails.....	11 58		

But with all the advantages of this tariff the French iron-masters are but poorly equipped for competition in foreign markets with their rivals in other and more favored countries. The railway freight tariffs of this country are generally exorbitant. The following are the rates upon iron and coal of the Paris-Lyons-Mediterranean Railroad Company, which has the monopoly of interior transportation in this district:

*General tariff for quantities less than a car-load, based on the following rates per ton per mile.*

Distance.	Steel hoops and galvanized iron sheet and hardware.	Steel bars and sheet-iron.	Iron bars.	Pig-iron, rails, and coke.	Iron ore, coal, and briquettes.
	Cents.	Cents.	Cents.	Cents.	Cents.
12 miles and less	4.349	3.728	3.106	2.485	2.485
16 to 18½ miles	4.349	3.728	3.106	2.485	1.243
18½ to 23 miles	4.039	3.417	2.796	2.485	1.087
23 to 124 miles	4.039	3.417	2.796	2.175	1.087
124 to 186 miles	4.039	3.417	2.796	1.243	0.932
187 to 248 miles	3.728	3.106	2.485	1.243	0.932
249 to 372 miles	3.417	2.796	2.175	1.243	0.932
373 to 434 miles	3.106	2.485	1.864	1.243	0.776
435 to 496 miles	2.796	2.175	1.553	1.243	0.776
497 to 558 miles	2.485	1.864	1.243	1.243	0.776
559 to 621 miles	2.175	1.553	1.243	1.243	0.621
622 miles and upwards	1.864	1.553	1.243	1.243	0.621

*Rates per ton in shipment by car-load.*

Distance.	Hardware.	Sheet-iron.	Steel and iron bars and sheet-iron in packages.	Iron ore.	Coal and iron and steel for export.
	Cents.	Cents.	Cents.	Cents.	Cents.
12 miles and less	3.106	2.796	2.485	2.485	3.485
16 to 18½ miles	3.106	2.796	2.485	1.243	1.243
19 to 63 miles	3.106	2.796	2.485	0.932	0.621
64 to 93 miles	2.796	2.485	2.485	0.777	0.621
94 to 124 miles	2.796	2.485	2.174	0.777	0.621
125 to 186 miles	2.796	2.018	1.242	0.777	0.621
187 to 310 miles	2.485	1.553	1.242	0.777	0.621
311 to 372 miles	2.175	1.551	1.242	0.777	0.621
373 to 434 miles	1.864	1.553	1.242	0.777	0.621
435 to 496 miles	1.553	1.243	1.242	0.777	0.621
497 miles and upwards	1.243	1.243	1.242	0.621	0.621

The visitor to the metal and mining districts of France is impressed everywhere with the idea that the iron and steel industries are exotic in this country. The Frenchman is not by nature a miner or an iron-maker. As a manager he is plodding and conservative, slow to adopt new ideas and processes, and given to repairing his old machinery instead of replacing it with new and more effective apparatus. As a workman he is careful and industrious, but slow and perfunctory, doing mechanically what he is taught, working against time with the single purpose of earning his wages. An intelligent foreman in one of the iron mills of the Gard says that he would gladly pay English or Welsh workmen double the wages per day that are paid to Frenchmen for similar kinds of labor. The few British operatives who are employed on piece-work in these establishments uniformly earn twice as much as native workmen of the same class. At several silk factories in the same and adjoining departments it has been found that English women could operate simultaneously two looms, while their French sisters could attend only one.

A comparison of the industrial statistics of France with those of England and Germany shows that a French machinist receives 7 francs for the same labor that a German will do for 4. Coal costs on an aver-



age 11.50 francs per ton in France, against 5.50 francs in Germany and England. Ore, as estimated on the basis of its real value for producing iron, costs 4 francs per ton in England, 5 in Germany, and 6.50 francs in France. As a result, wrought iron, cast iron, and steel are 49, 20, and 46 per cent., respectively, cheaper in England, and 39, 25, and 31 per cent. cheaper in Germany, than they are in France. With this disparity in the cost of materials which constitute the basis of so many industries, and the inherent inferiority of French operatives in most kinds of skilled labor, the disadvantages under which the manufacturers of this country are now laboring are substantially explained. Similar causes have given to Basle and Zurich a large part of the ribbon and silk manufacture which St. Etienne and Lyons formerly monopolized.

The French industrial classes are perhaps the most frugal people in Europe, but they, like their employers, are self-satisfied, trammelled by routine, and lacking in that ready ingenuity and enterprise which alone can maintain competition in this age of progress. The serene conservatism that weighs cargoes of wheat and sugar *with steelyards* on the wharves of Marseilles, and still toils in counting-rooms until 8 o'clock at night in order to do its banking and commerce by the cumbrous methods of the Middle Ages, becomes fatal when applied to modern manufactures.

FRANK H. MASON,  
*Consul.*

UNITED STATES CONSULATE,  
*Marseilles, November 3, 1885.*

## LABOR IN BORDEAUX.

### REPORT OF CONSUL ROOSEVELT, OF BORDEAUX.

The department of the Gironde is almost entirely devoted to the growing of the vine and to wine-making, very little attention being given to manufactures of any kind.

There are no woolen or cotton mills in this department; no mines, and consequently no smelting furnaces; and but one manufactory of machinery for mills and steamships.\*

#### FAIENCE MANUFACTORY.

I directed my attention to the establishment of Messrs. Vieillard & Co., manufacturers of faience or delfware. This factory was founded many years ago by a philanthropic Englishman, for the benefit of the working people of Bordeaux, not only to give employment but to place upon the market a superior quality of ware at cheap rates. Like many similar projects, it was not a success until controlled by a company.

The present manager was unwilling to give me information, and replied to my different interrogatories in the following unsatisfactory manner:

I do not know the size of our present building nor the space of ground covered by it. We have not kept an account of the outlay for repairs and enlargement of buildings, but have made them whenever necessary and as the exigencies demanded. I cannot state the exact amount of annual taxes paid by us upon land, buildings, or machinery; do not wish to name the amount of insurance we carry, nor enter into

\* Upon soliciting information regarding the establishment, workings, and running of the above-mentioned manufactory, I was brusquely answered that it had taken years to arrive at their present prosperous condition, and that they positively refused to answer questions or give information for the benefit of similar institutions, or for governmental or private use at home or abroad.

the expenses of production or other expenses arising therefrom. I have no hesitancy in saying that we are perfectly satisfied if we receive 5 per cent. annually on our invested capital.

At our factory we have 1,000 employes, men, women, and boys; at our bottle and glass factory, 200 employes. We pay our employes from \$14.48 to \$57.90 per month, according to efficiency.

The working hours are from 7 to 12 a. m. and from 1 to 6 p. m.

The average length of credit extended to our customers is ninety days. The usual rate of interest paid by responsible manufacturers in France for use of money is 5 per cent.

Seemingly wearied by my questions, he finally said:

We worked forty years to acquire a proficiency in our trade and to establish a successful business, and are indisposed to speak freely of the methods and rules regulating our business.

I subjoin a table giving the actual living-expenses of a workingman whose family consists of wife and five children.

GEO. W. ROOSEVELT,

UNITED STATES CONSULATE,

Consul.

Bordeaux, September 12, 1885.

*Elements of cost in the actual living-expenses of a workingman earning \$446.36 per year, with a family composed of two adults and five children.*

Items of expense and cost.	Per week.	Per year.
<i>Miscellaneous.</i>		
Rent of rooms or house .....	\$1 12	\$58 24
Government and church taxes .....		
Fuel .....	30	15 60
Petroleum, 2 quarts, at 7½ cents .....	15	7 80
Physician's fee for family .....	*8	4 16
<i>Food.</i>		
Bread, 49 pounds, at 3 cents .....	1 47	76 44
Coffee, (ground) 1 pound, at 39 cents .....	39	20 28
Sugar, 1 pound, at 11 cents .....	11	5 72
Milk, 12 quarts, at 4 cents .....	48	24 96
Potatoes, 20 pounds, at 2 cents .....	40	20 80
Cow beef, 2 pounds, at 24 cents .....	48	24 96
Salt pork, 1 pound, at 20 cents .....	20	10 40
Lard, ½ pound, at 16 cents .....	8	4 16
Eggs 2 dozen, at 24 cents .....	48	24 96
Vegetables, beans, peas, cabbage, &c .....	60	31 20
Wine, 12 quarts, at 8 cents .....	96	49 92
Vinegar, salt, and pepper .....	10	5 20
Soap, 2 pounds, at 7 cents .....	14	7 28
<i>Clothing.</i>		
Shoes for man:		
3 pairs wooden, at 80 cents .....	12	60
1 pair leather, at \$2.60 .....	5	2 60
Suit of clothes for man, at \$3 .....	58	3 00
Shoes for wife:		
Wooden, 2 pairs, at 30 cents .....	1 11	60
Leather, 1 pair, at \$1.50 .....	3	1 50
Two dresses for wife .....	9 10	5 00
Working overalls, 2 pairs, at 52 cents .....	2	1 04
Cotton shirts, 6, at 61 cents .....	7	3 66
Two pairs drawers, at 52 cents .....	2	1 04
Six pairs socks, at 15 cents .....	18	90
Outer-clothing for five children .....	71	36 92
Shoes for five children .....	38	19 76
Underclothing for five children .....	28	14 56
Woolen yarn, for stockings, 2 pounds .....	1 10	60
Total .....	9 31 10	484 22

\* Per contract.

Average cost per week for clothing for family .....	\$1 77 10
Average cost per week for clothing for each person .....	25 40
Average cost per week of food alone .....	5 89
Average cost per week per person for food .....	84

## THE PORCELAIN WORKS OF LIMOGES.

## REPORT OF CONSUL IRISH, OF COGNAC.

Among other industries of this district, however, it may assist in the elucidation of the general subject to furnish some information on a very important business at Limoges, that of the manufacture of porcelain, and which furnishes the entire business of our consular agent at that point in its connection with the trade of the United States.

But from the nature of the case I am enabled to present only a modicum of facts (except as to wages and subsistence of laborers), and these of a general nature, rather than the details of a particular manufactory, and for part of which I am also indebted to Mr. Jouhannaud, the consular agent.

## KAOLIN DEPOSITS.

In 1765 there was discovered at St. Triéux, a town of over seven thousand inhabitants, 13 miles south of Limoges, a large deposit of porcelain earth, and extensive quarries of this material were opened in the granite rocks. Kaolin is the result of the decomposition of the feldspar, from which it is separated by washing, and is the porcelain earth properly speaking; and petuntze or white unadulterated feldspar is used for producing the glazing and for the manufacture, combined with the kaolin, of the more translucent varieties of china.

About two thousand persons are employed in and about Limoges in the manufacture of the porcelain, and Sevres is also supplied from the same quarries.

The kaolin is ground in mills specially prepared for the purpose, and is thus transformed into a floury paste, which is called *pâte à porcelaine*. This substance, after having been clarified, forms a white mass of a consistency which can be compared to bread taken from the kneading-trough before baking. Workmen, according to their several specialties, employ this *pâte* to make not only all the various articles of china for a table service, but into many and beautiful forms of art and articles of luxury. Not only is much skill evinced in the process of turning, but great pains is taken in burning in the kilns, which in some instances is also repeated.

## OUTLINE OF THE BUSINESS.

A manufacturer of porcelain who possesses but a single kiln occupies a superficial area of about 500 square yards, employing 60 workmen. He burns probably 65 kilns per year, at a value of about 2,500 francs each, thus producing about 130,000 francs' worth of porcelain, or nearly \$26,000.

## CLASSES OF WORKMEN.

The workmen are divided into many different classes for the process of the business, such as *batteurs de pâte*, modelers, mill-feeders, molders, turners, retonchers, enamelers, trimmers, polishers, *useurs de grain*, glaziers, kiln-burners, mixers, storemen, and packers.

## ROYALTIES OR PATENTS.

There are no royalties or patents for the manufacture of porcelain. Any person can engage in the business who has capital and the necessary knowledge for it.

# PATENT MACHINERY.

Three manufacturers have provided themselves for one half of their work with patented machines of Mr. Faure, engineer, for turning deep dishes, plates, and saucers. This system of machines bids fair to be adopted by all the principal manufacturers.

Mr. Faure not long ago received an order for them for the royal manufactories of Portugal. They tend to considerably abridge the work, and can be run either by steam-power or water. The three manufacturers who use the machines of Mr. Faure employ steam-engines of 50 horse-power, at a cost of .014 cent per horse per hour.

## WAGES AND CUSTOMARY HOURS OF LABOR.

The wages of the workmen vary according to the kind of work and habits of each, some working by the day and others by the piece, the result being according to their application. An average obtains, however, of about 4 francs per day (77½ cents).

The price of labor has diminished within two years past, as prior to 1883 a day's work amounted to about 5 francs. This decrease of wages arises mainly from foreign competition, prices of goods being lowered to retain patrons, and the profits also being diminished.

The work-day is twelve hours, with intervals in all of two and one-half hours for meals and rest.

## SUBSISTENCE OF LABORERS.

The food of the laborers is generally as follows: At 8.30 a. m., soup, with vegetables and bacon; at 12 m., dinner, composed generally of beef, veal, salt pork, or mutton, with a plate of vegetables, potatoes, or beans, little of fish; for drink, about a quart of wine, coffee with sugar, and brandy; at 8 p. m., after work is over, soup, with vegetables and bacon, cheese, and fruit, according to the season. The maximum of cost for this nourishment is about 3 francs (57.9 cents) per day.

The clothing for some years past has been better than formerly, and workmen are clothed as suitably as those at Paris, the outfit comprising the usual varieties of garments and amounting annually to about 200 francs (\$38.60).

The rental for a family of husband, wife, and one or two children costs about 250 francs (\$48.25) per year, usually in a populous quarter, but not in the center of the city. Usually the wife is also engaged in employment to assist in defraying the expenses of the household. A good many are occupied in the manufactories of porcelain at more difficult hand-work than that of the men, earning from 1½ to 2 francs per day. It will be seen that care and economy are necessary to make the ends of the year meet.

## COST OF LABOR FOR PRODUCTION OF GOODS.

The best estimate of the cost of labor is to the effect that the hand-work represents about one-half of the price or value of the porcelain manufactured.

## QUALITY OF THE PRODUCT.

In Limoges only the best kinds of porcelain are manufactured. Very fine decorations are made upon the white porcelains, which augment the

price a considerable sum. The decorators form a numerous body, and women in great numbers are employed thus in the work-shops.

This artistic work gives to the workers of both sexes a salary somewhat higher than in the first fabrication. Notwithstanding the commercial crisis and the foreign competition, the decorated porcelains of Limoges are, and will be for a long time, sought for by buyers anxious to obtain superior qualities and of the best taste.

#### CUSTOMARY USE OF THE PRODUCT.

As is well known, this porcelain figures on the tables of all the best hotels and restaurants, and particularly under the designation of table services for tea, coffee, &c. As an article of luxury, it is found under the form of *cache-pots*, *potiches*, *appliqués*, or inlaid work, decorated plaques for apartments, white statuettes, or decorated to ornament mantels, &c.

The manufacturers of this region export their products to the United States, South America, England, Russia, Spain, Italy, Switzerland, &c.

#### TRANSPORTATION.

The merchandise for the Continent is transported mainly by railroad, as there are but few canals, and that which is to go abroad is sent via the various steamship companies from Havre, Bordeaux, Marseilles, or Saint Nazaire, according to their destination.

The price of transportation by railroad is about 10 centimes per ton of 1,000 kilograms, per kilometer, equal to about .03 cent per ton of 2,000 pounds per mile, and is a special tariff for porcelain. The price by steamship is about 8 centimes for the same, excepting in cases where companies are in competition.

#### LOCAL TAXES AND TARIFF DUTIES.

There do not exist for Limoges or any French city any local duties for foreign products that have paid the duty at the port of entry.

The only matter subject to duty to the city is the food or drink brought in for its sustenance, whether from French provinces or foreign.

Thus there is a duty on wine of 3.20 francs per hectoliter (about 2.3 cents per gallon); meat, 5 centimes per kilogram, or 1 cent per 2.2 pounds; game, from 2 to 4 cents per head, according to its nature; poultry, chickens, ducks, 2 cents per head, and a small sum for vegetables.

Alcohol, brandy, and spirits of wine pay 21 francs per hectoliter (about 15 cents per gallon), besides duties of administration and circulation.

J. E. IRISH,  
Consul.

UNITED STATES CONSULATE,  
Cognac, October 22, 1885.

## COTTON INDUSTRY OF ROUEN.

## REPORT OF CONSUL WILLIAMS.

*Estimate of the cost of a factory of 10,000 spindles for spinning cotton thread of No. 24 French (28.32 English).*

Francs.

Foundation and one-story building, containing space for blowing-machines, mixing and receiving rooms, workshops, counting-rooms, &c., so built that two stories could be added, if required, 3,400 meters square (meter, 3 feet 3.4 inches), at 42 francs per meter .....	142,800
Foundation and building for engine and boilers, chimney .....	33,000
Sheds for cotton .....	4,000
Yard, 2,500 meters .....	10,000
	<hr/>
	189,800
	<hr/>
Engine of 160 horse-power .....	40,000
Two boilers complete, with 2 feed-water heaters .....	31,000
Steam heating apparatus .....	1,500
Shafting, &c., to transmit power .....	25,000
Gas conductors .....	7,000
	<hr/>
	109,500
	<hr/>

## SPINNING MACHINERY.

1 simple separator, Crighton; 1 double lap-machine, Scutcher; 2 simple lap machines, Scutchers; 1 sharpening machine, 1 crushing machine, 2 pairs of Horsfall's traveling sharpeners, 28 Union card engines, 6 drawing frames with 8 heads, 2 slubbing frames for 18 spindles, 3 intermediary for 120 spindles, 6 roving-frames for 164 spindles, 12 twistors for 840 spindles.....	2-7,000
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## MINOR MACHINERY.

Settings of carding engines .....	14,000
Iron work for cards and stretchers .....	2,900
Tubes and cruel-pegs .....	4,700
Belts .....	7,000
Spindle-bands .....	2,000
Fastening-bolts, screw-rings, cement .....	1,400
Various spare articles .....	5,000
Tools for repair shop .....	5,000
Spare press-rolls .....	1,200
Steamer and 100 boxes .....	4,000
Wagon scales .....	1,500
Cotton and yarn scales .....	200
Fire engine, hose, and buckets .....	1,800
Extinguishers .....	450
Various articles of furniture, tables, closets, &c .....	1,400
Tools for placing machinery .....	500
Baskets for bobbins, waste, &c .....	600
Scales, quadrant, and reels .....	350
Reservoir for oil, cans .....	450
Keys .....	140
Dust-cloths and towels .....	100
Brooms, brushes .....	200
Clock, thermometer, hygrometer, bells .....	150
Calico for main cylinders .....	110
Automatic greasers for bearings .....	250
Omissions, duties, transportation of above, &c .....	13,000
	<hr/>
Total .....	68,400
	<hr/>

## RECAPITULATION.

Land and buildings .....	189,800
Engine, boilers, and shafting, &c .....	109,800

	France.
Spinning machines .....	287, 000
Minor machinery and omissions .....	68, 400
Total cost .....	634, 700
Cash capital .....	250, 000
Total .....	904, 700

## ANNUAL COST OF DIRECTION AND LABOR.

1 director .....	6, 000
1 overseer of spinners .....	1, 800
1 overseer of assorting and preparatory department .....	1, 350
1 entry and shipping clerk .....	2, 000
1 engineer, at 4.50 francs per day .....	1, 350
1 fireman, at 4 francs .....	1, 200
1 smith, at 6 francs .....	1, 800
1 assistant to Smith, at 2 francs .....	600
1 concerge, coverer of rollers, lodged and fed, at 3 francs .....	900
1 watchman, at 3.50 francs .....	1, 050
1 carman, lodged, at 3.50 francs .....	1, 050
2 laborers, at 3.25 francs .....	1, 950
1 man for mixing waste, at 3.50 francs .....	1, 050
1 man for mixing at the opener, at 3 francs .....	900
1 woman at the lap machine, at 2.75 francs .....	825
1 man at the simple blowers, at 3 francs .....	900
2 card-engine setters, at 4.5 francs .....	2, 550
1 tool-sharpener, at 3.25 francs .....	975
2 card attendants, at 3 francs .....	1, 800
2 women for drawing-frames, at 2.75 francs .....	1, 650
2 women for stubbing-frames, at 3 francs .....	1, 800
3 women for intermediates, at 3 francs .....	2, 700
3 women for roving-frames, at 3.25 francs .....	2, 925
3 women creel-fillers, at 1.75 francs .....	1, 575
6 spinners, at 5 francs .....	9, 000
6 large piecers, at 3.25 francs .....	5, 850
6 small piecers, at 2.25 francs .....	4, 050
1 man for steaming, looking after the doffings .....	975
1 man for oiling shafting, &c., at 4 francs .....	1, 200
Total .....	61, 775
To the above amount should be added 12 francs weekly for cleaning shafting, engine, and chimneys .....	625
Total .....	62, 400

## GENERAL EXPENSES.

Coal, 88 car-loads, at 170 francs each .....	14, 960
Oil and grease .....	5, 200
Lighting by gas (without works) .....	2, 800
Insurance and taxes .....	6, 000
Office expenses .....	2, 000
Traveling .....	1, 500
Subscriptions and gratuities .....	1, 500
Grants to agents .....	5, 000
Various handling of bales and delivery at the works .....	5, 000
Profit and loss, 2 per cent. discount on sales .....	12, 000
Wear and tear, 18 per cent. of settings of carding engines .....	2, 520
Cloth, leather for pressing rollers .....	1, 200
Cords, spindle bands .....	2, 000
Cast and wrought iron, wood, hardware .....	1, 500
Belts .....	1, 000
Repairs of cans, baskets, tubes, cruel-pegs, &c .....	500
Brushes and brooms .....	200
Keeping 1 horse, at 3 francs per day .....	1, 100
Total of general expenses .....	65, 980

## COST OF SPINNING.

Product of chain No. 24 per spindle and per day of 12 hours, 79 grams, which would give for the 10,800 spindles an annual product of 239,000 kilograms.

Francs.

Interest, 5 per cent. upon capital of 904,700, 45,235 per kilogram,  $\frac{45,235}{239,000}$  .... =0.190

Francs.

Deterioration of buildings, 3 per cent. upon 189,800 ..... = 5.694

Deterioration of engines and machinery, 3 per cent. upon 466,900 .... =28.014

Total deterioration ..... 33.708

Per kilogram,  $\frac{33,708}{239,000}$  ..... =0.141

Labor,  $\frac{34,400}{239,000}$  ..... =0.261

General expenses,  $\frac{34,980}{239,000}$  ..... =0.275

Total ..... \*0.867

Packing in boxes of 100 kilograms, entire cost ..... 0.04

Waste ..... 0.15

0.19

Cost of manufacture, packing, and other expenses before enumerated for No. 24 yarn would be per kilometer ..... 1.054

Cost of cotton in warehouse per kilometer ..... 1.339

Cost of kilometer of cotton yarn, No. 24, boxed, agents and commissions paid, and boxes destroyed ..... 2.393

No. 24 yarn reeled in skeins, expense of manufacture as above ..... 0.867

Reeling and putting in skeins of 5 kilometers of 1,000 meters ..... 0.09

Waste ..... 0.14

Cost of manufacture of yarn, No. 24, reeled into skeins of 1,000 meters ..... 1.107

Add cost of cotton ..... 1.339

Cost per kilometer of No. 24 yarn reeled into skeins of 5 kilometers, and measuring 1,000 meters ..... 2.446

CHARLES P. WILLIAMS,

Consul.

UNITED STATES CONSULATE,

Rouen, November 23, 1886.

## COST OF LABOR IN THE MANUFACTURE OF HAND-WOVEN SILK RIBBONS IN SWITZERLAND.

### REPORT OF CONSUL GIFFORD, OF BASLE.

I give the following details in regard to the manufacture of silk and mixed ribbons, the principal industry in this consular district, with a special view to showing the cost of labor in their production. Some of these details apply equally to goods manufactured in factories on power looms; but the latter will, if possible, be made the subject of a separate report.

On account of the rapid changes in style it is not customary in Basle to manufacture ribbons for stock, but only in execution of orders received from the customer.

### DYEING.

On receiving such an order the manufacturer sends the necessary quantity of material, that is, organzine, tram or fiolet silk, or cotton,

\* Including 2 per cent. discount on sales, a commission of  $\frac{1}{4}$  per cent. to agents for the sale of three-fifths of product, and an average transportation of 150 miles upon half of the product.



for the warp and shot, to the dyer, who charges for his services as follows:

	Per pound.
Silk organzines or trams .....	\$0 43
Floret silk .....	35
Cotton .....	13

#### WINDING, SPOOLING, AND WARPING.

Returned by the dyer, the material is next given to the winders. Most of the manufacturers have winding-machines in their own establishments; but others employ for this purpose women living in the adjoining country, who are the owners of winding-machines costing, when new, about \$30.

The wages for winding are about as follows:

	Cents per pound.
Organzines .....	20 to 28
Trams .....	13 to 21
Floret silk .....	3 to 13
Cotton .....	4½ to 9

The material for the shot must afterwards be wound on the bobbins. The young girls in the spooling-room earn for this service from \$2 to \$2.40 a week, during which time they make the bobbins for 7 to 12 looms.

Manufacturers who have their looms in the country send the silk or cotton in the skein to the weavers, who themselves wind and spool it for the shot.

The silk for the warp, after being wound on large spools at the prices above named, is sent to the warping room, and prepared according to the requirements of each loom. The price paid for warping is from 18 to 22 centimes (3½ to 4½ cents) for 100 threads 144 meters (157 yards) long. A new warping-machine costs \$20.

#### WEAVING.

In the factories the weaving is generally done on power looms. In the country hand-loom is universally used. They are made by members of a special profession, called loom-carpenters, and they are worth, when new, from \$90 to \$100. The manufacturer himself, who resides in Basle, and employs many weavers, owns the looms, and deducts 3 per cent. as loom-rent at each payment of wages for weaving. The wages for weaving are generally based on a length of 14.40 meters, and are intended to enable a good workman to earn from \$3.50 to \$4.80 a week, according to skill and attention required for the production of a particular article. The proportion these and other wages bear in particular cases to the whole cost of production will be shown in the detailed computation of the value of two samples inclosed. The country weaver is paid rather more for a given price than the factory employé, because the former must attend to the winding and spooling, and furnish his own fuel and light. The fancy ribbons and, of course, all the Jacquard articles are woven in the factories, where the constant presence of an overseer assures the uniform excellence of the work. The cheap goods and some of the better qualities of plain ribbons are exclusively manufactured on the country looms, it being impossible in Switzerland to make a profit on them otherwise, while in the United States, where hand-weaving is unknown, the production of the lower qualities is not attempted.

#### FINISHING.

The woven ribbon is next sent to the finisher, who subjects it to one or more of the operations known as calendering, dressing, and water-

ing. He is paid by the piece of 1,440 meters (1,575 yards) as follows, according to the width of the piece:

Calendering .....	\$0 50 to \$1 00
Dressing .....	75 2 40
Watering .....	2 80 8 00

#### MISCELLANEOUS EXPENSES.

The manipulations above referred to occur in the proper manufacture of ribbons. But when completed they must be cut into suitable lengths, 9 to 16.50 meters, according to the market for which they are intended. They are then rolled on blocks or drums made of wood or pasteboard, ticketed, and packed in boxes, and are then ready for transportation. Blocking girls are paid by the week, and earn from \$2 to \$3.

All these subsidiary expenses necessary for preparing the goods for transportation, as well as the transportation itself, with interest on capital, insurance, salaries of employes, fuel and lights, are together estimated at 12 per cent. of the cost of the ribbon proper. Expenses, not particularly enumerated, are denominated "charges" in the computations which follow.

#### COST IN DETAIL OF PLAIN HAND-WOVEN RIBBONS.

In order to make this branch of the subject perfectly clear, I subjoin a detailed calculation of the cost price of two samples, woven on hand-loom, which are transmitted herewith. The sample marked No. 1 is a plain satin and faille ribbon with a silk warp and cotton shot, and of a better quality than can profitably be exported to the United States, where the market for this kind of goods is supplied by home manufacturers.

According to Basle custom the calculation is made for a piece of 144 meters, the tenth of which, 14.40 meters, is still the basis of the price per line of goods exported to the United States. Goods designated for our market are now actually cut into pieces, 9 meters, or nearly 10 yards, long, and accordingly the cost of that length of the sample is also given.

#### *Cost of satin and faille ribbon, 144 meters long and 19 lines wide.*

Items.	Cost.
<i>Cost of raw material and dyeing.</i>	
940 threads organzine, weighing 372.8 grams, at 52 francs a kilogram .....	19.30
Dyeing organzines .....	1.86
568 grams of cotton, No. 100, double, at 5.40 francs a kilogram .....	3.23
Dyeing cotton .....	.98
Waste on silk and cotton, dyed and wound, 5 per cent .....	1.31
Total .....	26.68
<i>Wages.</i>	
Winding 372.8 grams silk, at 2.50 francs a kilogram .....	.93
Warping 940 threads, at 21 centimes a hundred .....	1.97
Weaving 144 meters .....	7.00
Finishing .....	.30
Total .....	10.20
<i>Charges.</i>	
Blocking, tickets, cartons, freight, interest, insurance, 12 per cent. of cost proper .....	4.42

#### RECAPITULATION.

Items.	France.	Per cent.
Cost of silk and cotton dyed .....	26.68	65
Cost of labor .....	10.20	25
Charges, including interest and insurance .....	4.42	10
Cost of 144 meters .....	41.30	100
Cost of 14.4 meters .....	4.13	
Cost of 10 yards, English measure .....	2.62	

The silk used in the manufacture of this sample was Italian organzine weighing 22½ deniers; that is, each thread 476 meters long weighs 22 Milan deniers, or rather more than 1½ metric grams.

The sample marked No. 2 is of very inferior quality, such as is exported in large quantities to the United States, where it is understood that the high rate of wages and the universal employment of power-looms do not permit the manufacture of such goods.

*Cost of inferior quality of satin and faille ribbon.*

Items.	Cost.
<i>Cost of raw material and dyeing.</i>	
	<i>Francs.</i>
396 threads organzine weighing 136.6 grams, at 51 francs a kilogram .....	6.97
Dyeing same .....	.68
598 grams No. 50 cotton, at 3.50 francs a kilogram .....	2.09
Dyeing cotton .....	.90
Waste of silk and cotton dyed and wound, 5 per cent .....	.65
Total .....	11.19
<i>Labor.</i>	
Winding 136.6 grams silk, at 2.50 francs a kilogram .....	.34
Warping 396 threads, at 21 centimes a hundred .....	.83
Weaving 144 meters .....	5.00
Dressing .....	.75
Total .....	6.92
<i>Charges.</i>	
Blocking, measuring, tickets, cartons, freight, interest, insurance, &c., 12 per cent. of cost of ribbon proper .....	2.17

RECAPITULATION.

Items.	Francs.	Per cent.
Raw material and dyeing .....	11.19	55
Labor .....	6.92	35
Charges .....	2.17	10
Cost of piece 144 meters long ..	20.28	100
Cost of piece 14.40 meters long ..	2.02	
Cost of piece 10 yards long .....	1.29	

The silk used for this ribbon is Italian organzine, as before, but of inferior quality, weighing only 19½ deniers for a length of 476 meters. The silk is, of course, used for the warp and the cotton for the shot in both ribbons.

Since the above computations were made the price of raw silk has risen considerably, so that the organzines above stated to cost 51 and 52 francs a kilogram, respectively, could not now be purchased for less than 56 to 58 francs. This new price of silk, if made the basis of the computation, would increase the cost of the better quality of ribbon 5½ per cent., and of the inferior quality 3½ per cent.

GEORGE GIFFORD,  
*Consul.*

UNITED STATES CONSULATE,  
Basle, November 30, 1885.

## AGRICULTURE IN CATALONIA.

REPORT OF CONSUL SCHEUCH, OF BARCELONA.

## NATURE OF THE LAND.

The ancient principality of Catalonia is divided into four provinces, viz, Barcelona to the east, Gerona to the northeast, Lerida to the west and north, and Tarragona to the south.

The city of Barcelona, in the province of the same name, is situated on the sea coast, which runs from northeast to southwest. It lies in a plain, surrounded on all sides by mountains, with an opening to the north for the passage of the Besos River, and to the west for that of the Llobregat.

The soil in this plain is mainly composed of reddish clay, with nodules of chalk, which in some places form limestone banks, known in the vernacular under the name of *torturó*. The composition of the soil of the mountains around Barcelona and of the inland part of the province varies according to the nature of the rocks from which it is formed. To the extreme northeast, where granite predominates, the land is abundant in sand and mica, and presents a general gray color. Sand and clay are also to be found in the plains around Sabadell and Tarrasa, or in that around Villafranca. Limestone is abundant in the neighborhood of Pachs.

The decay of the rocks of the mountains around the city of Nîch gives rise to two different classes of soil, for whilst silicious sands are characteristic in the northeast and southern portions, marly clays are very abundant to the south, southwest, west, and northwest. Chemical analysis has likewise shown the want of vegetable soil and lime salts in these regions. The lands of the coast and right bank of the valley of the Tordera in the northeast part of the province of Barcelona are composed principally of the products of decay of the granite rocks abundant in that region. The left bank of the Tordera belongs to the province of Gerona, and the soil is marly clay, of which the lands of the sections of Palau to the south of the city of Gerona, and of La Bisbal, may be considered as types. Here the soil is the result of decay of the Paleozoic rocks of the Pyrenees and the Gabarras. Next in importance in this region are the marly limestones that abound in the vicinity of Quart. The silicious sands that cover the plain of Ampurias, and part of the district of Bagur are also remarkable on account of offering, as proved in recent years, a sure refuge to the grape-vine against the ravages of the phylloxera, which never invades these lands.

Gypsum is plentiful around Bañolas, where conchiferous marl is also quite abundant. This marl, which crumbles easily, is rich in oyster fossils, thereby indicating large quantities of phosphate and carbonate of lime, and is used for the improvement of the surrounding lands.

The plain of Urgel, in the province of Lerida, is of considerable extent. The upper or vegetable soil is principally of sandy marl, fit for cultivation in general on account of the material of which it is composed. The presence of saltpeter is a distinctive feature in this section, adapting it specially to the cultivation of the grape-vine. This salt is originated from the lakes and swamps that formerly covered the plain. The agricultural conditions here have undergone a radical trans-

formation through the construction of the canal, one of the most important in Spain, which traverses the plain from one extreme to the other, fertilizing the fields, once sterile and scorched by the sun in years of drought. Owing to this fact the irrigated part of the province of Lerida is renowned for its feracity. The diluvial slime and mud from the river Segre are extended over the land, and the fertilizing mineral and organic elements so necessary for worked land are found in more even quantities. In Segarra, limestone of the same nature as that of the surrounding rocks predominates, gypsum and sand proceeding from the underlying rocks. The proportion of the three mineral elements, silicious sand, chalk, and clay, is such that the conditions are not unfavorable for agricultural purposes, though not of the highest character, on account of the shallowness of the soil.

Besides gypsum, magnesia, and oxides of iron, which are found in the greater parts of land in this region, the borders of the river Cervera and Torrent Salat (Salt River) are remarkable for the presence of sulphate of soda on account of the peculiar chemical properties these substances impart. The district of Segarra is comprised in part of the province of Lerida, already mentioned, and part in that of Tarragona. The rest of the latter is formed by the valley of the Ebro, where the soil is principally formed by substances transported by this river. These substances proceeding from rocks of different nature, and coming from a considerable distance, form very complex soil. Here the olive tree and grape-vine thrive wonderfully together, thus indicating the presence of due proportions of mineral and organic elements.

#### USUAL WAY OF LEASING THE LAND.

In Catalonia land is rented out in three different ways: Hire or "true lease," copartnership, and "quit-rent."

The following rules are generally observed in leasing rural real estate: The lease is for a given time, at the expiration of which the contract ceases, no notice being necessary on either side, nor can the tenant claim possession of any kind whatever. If, however, the tenant remains with the consent of the owner the lease is "understood" to be extended for another year. When no specified length of time is previously stipulated the lease lasts according to the will of the contracting parties, a year's notice being required of either party wishing to put an end to the rent. The owner may evict the tenant either for misuse of the land, for want of payment of the stipulated sum, or for failing in any way to fulfill the obligations to which the contract binds him. The tenant is strictly responsible for damages and injuries occasioned by neglect of working and properly manuring the land, nor can he rent out the land or part thereof to third parties without the consent of the owner, but he is free, unless especially agreed to the contrary, to sell or give away products and pastures. The only case in which the tenant may be exempted from the payment of rent is that, on account of hail, inundations, or other extraordinary calamity, during a whole year, he has been unable to collect any produce from the land; and if for the same reasons the crop should have suffered, he can claim a corresponding reduction. No matter what may be the cause of loss in whole or in part of the crop, the tenant can claim nothing on account for seed used or expenses of cultivation. The owner cannot exact an increase of rent on account of abundant crops in special good years, but in this case he can exact the payment of sums retained in previous unfortunate years already mentioned.

LEASE BY PARTNERSHIP.

The owner furnishes the dwelling and all the improvements of the land up to the date of agreement, and the tenant his labor and part of the capital for seed, fertilizes, &c. The products are divided in the proportion stipulated beforehand. Lease by partnership is in reality only a variety of ordinary lease, but it deserves mention on account of being generalized in Catalonia, producing excellent results. The land is ceded to the tenant for an indefinite period, the first three years only being considered obligatory. After this time the lease ceases at the will of either party, with one year's notice, otherwise the contract remaining binding. The tenant cannot plant or gather the crop without permission from the owner, neither can he dispose of the manure and refuse, to be used for the improvement of the land.

Emphyteusis, or quit-rent, is a contract often made in Catalonia, which reserves to the owner the rights of domain and binds the tenant to improve the land. At the time of lease a certain sum is stipulated, payable annually either in money or equivalent produce of the land. In some cases the tenant pays a given amount on entering into possession, which varies from one-half of the actual selling value of the land down to a nominal sum or object (often "a glass of water"). Emphyteusis is either perpetual or temporary. When "perpetual" the tenant cannot be evicted unless for default of payment of quit rent in two consecutive years.

Temporary quit-rent, known in Catalonia as *rabassa morta* (dead stock), is a lease of improved land to be dedicated to the planting of a vineyard, the tenant being obliged to pay yearly a certain sum of money or an amount of produce. The lease lasts while the vineyard lives or till the stocks (*rabassas*) of the vines die, when the owner enters again into possession of the land. To avoid indefinite existence of the vineyard by the planting of new stocks, which is forbidden, and to preclude the failure of observance of this stipulation the extreme limit of the life of a vineyard is fixed by law at fifty years, and is considered to be dead when two-thirds of the stocks are so.

MANNER OF PAYING RENT FOR LEASED LAND.

Lease, in the ordinary sense of the term, is rather rare in Catalonia, and only occurs in regard to small extensions of ground at a considerable distance from the residence of the owner. The rent varies not only according to the quality of the land, but for many other causes, such as its vicinity to towns and large centers of consumption, to railroads or other ways of communication, &c. Lands thus situated are of three kinds as regards rent, as follows, per annum :

Kinds.	Reals.	United States money.
For one hectare of land of the first-class.....	744	\$37 20
For one hectare of land of the second class .....	411	20 55
For one hectare of land of the third class .....	274	13 70

These prices are for unirrigated lands, fit for the cultivation of cereals, alternating with vegetables, the owner paying the taxes and imposts of all kinds. Land of the first class produces in an average good year 3,306 liters per hectare, that of the second class 1,322, and of the third class 496 liters. Rent for land of the first class is higher when yielding a second summer crop. Irrigated lands, capable of producing more

valuable crops than cereals, bring a much higher rent; thus in the vicinity of Gerona \$73.15 is often paid per hectare for good land.

Lease of the ordinary kind is not generally given for lands dedicated to vineyards, as on account of the profits from their cultivation owners prefer to take charge of them themselves. When, however, for some cause or other, a lease is granted, the price paid for rent is one-half the value of produce; in years of average good yield, 685 reals=\$34.25.\*

Lease by partnership is most in use with larger tracts of land, the owner receiving as rent of first-class land one-half of the products; of second class, two-fifths; and of third class, one-third.

#### MODE OF CONTRACTING LABOR AND WAGES PAID.

Farm hands are contracted in two ways. Some are maintained and live in common with the farmer, who furnishes, also, the working implements, while the journeymen laborers keep themselves, find the implements, furnishing sometimes even the horses, oxen, &c., necessary for the work to be done, and can ask no indemnity for wear or breakage of implements.

#### IMPLEMENTS USED.

The state of advancement of agriculture in any region may be judged by the greater or less perfection with which work is done, dependent, in a great part, on the spirit of routine or progress in the use of implements and machines. Here, as elsewhere, one of the principal agricultural implements is the plow. The one universally used throughout Catalonia till within a very few years, and now quite common in some parts, is the primitive "rudder plow." The principal parts are the share or iron point that penetrates the ground, set into the share-holder by the other end. This holder, which is a stout piece of wood, carries two branches (*orejas*, wings), one on either side, which scatter and pile the earth turned up by the share. Finally, there is the rudder, to which the horses or oxen are yoked, and the handle, placed behind to guide. Among modern plows most in use are those with one fixed share, divided pole, and a blade or root cutter in front in an oblique direction to the surface of the earth. Those most used, no doubt on account of being manufactured in Barcelona, although of foreign invention, as their names indicate, are "Howard's" and "Ransom's." In both kinds there is but a single plowshare, a blade for cutting roots, one or two wheels in front, two handles, and the entire frame made of iron. Some of the Ransom pattern have wooden frames.

To break up the lumps of earth the common rake is used. The most simple is composed of a piece of wood with a row of iron prongs or small blades inserted. Joined to this piece of wood, in T shape, is a pole about 5 feet long, which serves as handle. Another style of rake still much used, although of very old date, is a rectangular frame with cross-pieces of wood, from which and from the sides of the frame project the prongs. Of late years modern rakes of the Howard and Ransom pattern are manufactured in Barcelona, and in use. Other implements employed are the ordinary spade, the mattock, the hoe, the scythe, the sickle, &c.

#### AGRICULTURAL MACHINES IN USE.

The introduction of agricultural machines and other costly apparatus in Catalonia will always be difficult, first, on account of the hilly lands, and, second, of the minute distribution of rural property.

\* In the province of Barcelona a hectare planted as vineyard produces on an average 17 hectoliters, worth about \$68.55.

Under the head of mechanical appliances could be put some of the plows of modern type already mentioned, with the addition of some steam plows. Of mowing-machines, only a very few of Wood's and Hornsby's are in use, also some of Ransom's pattern, made here. Of thrashing-machines, I understand the Ransom's, made in Barcelona, are preferred to Marshall's and Fowler's, the reason, as given me, being that the former has an appliance which delivers the straw cut and stamped the same as it comes from under the hoofs of the horses on the ordinary thrashing-floor.

#### WAGES, HOW PAID, WORKING HOURS, ETC.

Human labor for agricultural purposes, like ordinary merchandise, is subject to the general law of supply and demand, the work to be done varying greatly according to circumstances. Thus, in winter, in periods of little work or when labor is overabundant—a very rare case in Catalonia—day wages decrease; 8 reals=40 cents is the usual price in these times, while in some regions where agriculture has reached a degree of development, as high as 10 reals=50 cents is paid. Wages are higher in summer, when the principal crops of the province—grain, olives, and grapes—are gathered.

In harvesting grain, day wages reach 14 reals=70 cents, and even more. Thus in the northeastern part of the province of Gerona, exposed to hard gales from the north, laborers refuse to engage for the whole harvest, preferring to work by the day, for when the stormy north winds, so much feared, called "*tramontana*," prevail as they cause heavy losses to farmers from the shaking of the grain-laden blades, reapers improve the opportunity and exact at times as high as 80 reals=\$4 for a day's work.

In vintage time a similar increase is obtained for work in vineyards. Women are sometimes engaged for light work, their wages per day amounting to from 2 to 3 reals=10 to 15 cents.

Laborers are paid their wages either at the end of the harvest or by the month or week, the last being the most customary. The payment is always made in hard money. According to law of Catalonia, wages due and not paid draw interest at the rate of 3 per cent. for one year, and become void at the expiration of that time, unless the debt is acknowledged in some writing, either public or private.

Work commences in winter at 6.30 a. m. and finishes at 5.30 p. m. Breakfast is taken before starting to work; at 10 a. m. half an hour is given for a slight repast; at 12 m. one hour for dinner; at 3 p. m. half an hour for lunch; and supper is taken after the day's work is over. The full working hours are therefore nine. In summer, work begins at 4 a. m. and ends at 7 p. m., of which three hours are employed for meals, leaving twelve hours for work.

#### MAINTENANCE OF LABORERS.

In fixing the price for labor paid it is understood that the laborer maintains himself. In summer, before going to work, they partake of a soup of bread and water; breakfast at 6 a. m.; take a mouthful of food at 10 a. m.; dine at 12 m.; lunch at 4 p. m., and supper after the day's work is over. Their meals in winter I have already mentioned in treating of working hours.



## COST OF MAINTENANCE.

This might be ascertained by considering the class and quantity of food consumed by a laborer; but this method, on account of the lack of many important data and the great variety of circumstances that present themselves, would not give a result of any precision. A more exact way of arriving at a result is to consider the amount farmers *deduct* from the usual wages when they maintain the laborer. As a general rule the deduction made is 5 reals (25 cents) per day. In winter, when a day's wages is 8 reals (40 cents), only 4 reals are deducted, while in summer, during the harvesting of the principal crops, the deduction is 6 reals. This latter is to be considered a low figure for the cost, on account of the large amount of food consumed, especially wine, of which oftentimes each laborer takes a quart and a half a day.

## NATURE OF FOOD.

More attention is paid to quantity than quality of food, which, as previously shown, is taken very frequently during the day. Thus there are many laborers who eat meat but once or twice a year, and that on extra holidays, and who therefore have to compensate the lack of nutritious quality with the quantity consumed. Following up the order already established in treating of the hours for meals, I now mention the class of food taken at each one. In summer, before going to work, soup of bread and water, or bread soaked in oil, is taken. Breakfast is composed of potatoes or other vegetables. At 10 a. m. a slice of bread and a swallow of wine. Dinner, at 12 m., consists in the traditional soup of the country, "*escudella*," made with vermicelli, rice, and vegetables, finishing the meal with either boiled or fried (in oil) potatoes. A salad of vegetables or greens is taken as lunch, and supper is the same as breakfast, with the addition of greens or fruit. Meals in winter vary but little from those in summer. Dried fruit, instead of green, preserves are eaten, and quantities of salt fish, as cod and herring, which constitute generally the lunches. Bread, wine, vegetables, salt fish, and oil are the articles of food the Catalan laborers of all classes live on.

## CLOTHING, CLASS, QUALITY, ETC., AND COST PER YEAR.

The laborer's summer clothing is composed of the following articles: A cotton blouse, of dark blue color, in the shape of a shirt, put on over the head, and which hangs about a foot below the waist; a wide-brimmed straw hat, which is an advantageous substitute in this time of the year for the national red-flannel cap; a shirt, generally of cotton, and but rarely now made of linen, as formerly; a woolen waistband (*faja*), to protect the abdominal viscera from rapid changes of temperature; hemp sandals, with cotton tapes; velveteen trousers, and vest of the same material.

In winter the straw hat is substituted by the red-flannel cap (*gorra catala*), which hangs over the side of the head. There is likewise used a velveteen jacket instead of the cotton blouse in summer. The trousers, vest, and woolen waistband are the same the year round; heavy cotton drawers and woolen stockings protect legs and feet. The laborer has besides a woolen blanket, varying in shape in the different provinces, to protect his body in very cold weather.

Having thus enumerated the articles worn by the laborers, the price of each article is shown in the following table, the minimum time having been taken for durability and the prices for the classes most worn:

Pieces of clothing.	Durability.	Cost.		Yearly.
	Years.	Pistareens.*	Pistareens.*	
Straw hat .....	3	1	0.33	
Red cap .....	3	2.25	0.75	
Velveteen jacket .....	3	12	4	
Blouse .....	2	3	1.50	
Velveteen vest .....	3	3.25	1.08	
Worsted jacket .....	3	3	1	
Velveteen trousers .....	3	6	2	
Waistband .....	3	1.50	0.50	
Drawers .....	3	1.50	0.50	
Shirt .....	2	2.50	1.25	
Worsted socks .....	1	0.75	0.75	
Sandals .....	1	1	4	
Blanket .....	6	12	2	
Total .....		49.75	19.66	

\* A pistareen is equal to about 20 cents American.

It will be seen by the above statement that a farm laborer's outfit of clothing costs him yearly 19.66 pistareens, equal to \$3.93, taking the minimum of durability for each piece.

#### DWELLING—DESCRIPTION AND RENT.

Farm houses in Catalonia, all built of stone and mortar, generally comprise dwelling, barn, stable, tool-house, all in one. When complete the building is composed of ground floor and an upper story, and in some, though rare cases, a basement on the ground floor is used for stabling horses and mules, kitchen, and wine-cellar. This latter is placed in the basement when such exists. Besides these there is a large apartment, forming a sort of vestibule, as the main door opens into it, for the keeping of tools and agricultural implements. Here likewise is the stairway leading to the upper floor, used exclusively for sleeping rooms and granary. At some distance from the house is the dunghill, in the open air, and a shed for the carts. Rent is very seldom paid for these buildings, as for the greater part they are situated on farms worked in partnership, the owner granting the use; or, better, is included in the condition agreed to between owner and farmer. The owner is obliged to make all repairs and improvements necessary, while the tenant is obliged to personally help in all masonry work.

#### GENERAL COST PER HECTARE OF SOWING AND REAPING.

*Grain.*—On sandy soil, destined to the cultivation of grain, the nature of the crop varies every year in a period of four years, viz :

*First year.*

#### SCARLET BEANS.

[Real=5 cents.]

Items.	First-class ground.	Second-class ground.	Third-class ground.	Fourth-class ground.
	Reals.	Reals.	Reals.	Reals.
Upturning with spade, wages for eighty days' work, at 10 reals per day .....	800	800	800	800
Manure, 26 cart loads, first and second class; 23 loads third class, and 20 loads fourth class, at 32 reals per load .....	832	832	736	640
Sowing the beans, six days' work, at 12 reals .....	72	72	72	72
Seed, 240 liters .....	146	146	146	146
Digging, six and one-half days' work, at 12 reals per day ..	78	78	78	78
Picking the beans, thirteen days' work, by women, at 2 reals per day .....	26	26	26	26
Thrashing, men and beasts, sixteen days first and second class, thirteen days third and fourth class, at 12 reals .....	192	192	156	156
Total .....	2,146	2,146	2,014	1,818
Total in American dollars .....	\$107 25	\$107 25	\$100 70	\$95 90

*Second year.*

## WHEAT.

Items.	First-class ground.	Second-class ground.	Third-class ground.	Fourth-class ground.
	<i>Reals.</i>	<i>Reals.</i>	<i>Reals.</i>	<i>Reals.</i>
Plowing, 6½ days, man and beast, at 20 reals	130	130	130	130
Raking	13	13	13	13
Plowing for sowing	130	130	130	130
Seed, 240 liters	186	186	186	186
Sowing, 3 days' work, at 12 reals	36	36	36	36
Raking	13	13	13	13
Weeding, 20 days, by women, at 2 reals	52	52	52	52
Reaping, 6½, 6½, 5, and 3 days, respectively, at 16 reals	104	104	80	48
Carrying the sheaves and arranging them on the thrashing floor	60	60	53	40
Thrashing, men and horses, 23, 23, 16, and 13 days, at 12 reals	276	276	192	156
Total	1,000	1,000	885	804
Total in American dollars	\$50	\$50	\$44 25	\$40 25

*Third year.*

## BARLEY AND INDIAN CORN.

Items.	Barley, first-class ground.	Indian corn.		
		Second class ground.	Third-class ground.	Fourth-class ground.
	<i>Reals.</i>	<i>Reals.</i>	<i>Reals.</i>	<i>Reals.</i>
Plowing, 6½ days, man and beast, at 20 reals	130	130	130	130
Raking	13	13	13	13
Plowing for sowing	130			
Manure, 16 cart-loads, at 40 reals	640	640	640	640
Sowing	36	18	18	18
Seed	100	30	30	30
Raking and weeding	113			
Hoeing the corn		160	160	160
Picking the ears		120	120	120
Reaping	104			
Carrying sheaves to the thrashing floor and thrashing	240			
Total	1,536	1,111	1,111	1,111
Total in American dollars	\$75 60	\$55 55	\$55 55	\$55 55

*Fourth year.*

## WHEAT AND RYE.

Items.	Wheat, first-class ground.	Wheat and rye.		
		Second-class ground.	Third-class ground.	Fourth-class ground.
	<i>Reals.</i>	<i>Reals.</i>	<i>Reals.</i>	<i>Reals.</i>
Plowing and leveling the stubble field	143			
Plowing for sowing	130	130	130	130
Manure	640	640	640	640
Sowing	36	36	36	36
Seed	180	186	186	186
Weeding	53	53	53	53
Reaping	104	104	80	48
Carrying and arranging sheaves	53	53	40	40
Thrashing	240	240	240	240
Total	1,585	1,442	1,825	1,253
Total in American dollars	\$79 25	\$72 10	\$86 25	\$61 75

CULTIVATION OF THE VINE.

*Cost of planting and cultivating a vineyard, and gathering the crop, per hectare.*

Items.	Reals.	Items.	Reals.
Deep plowing.....	130	Pruning, 5 days, at 12 reals.....	60
Raking.....	13	Manuring.....	200
5,000 stocks for planting, at 1 real the 100.....	50	Gathering the grapes.....	70
Planting, 5 days' work, at 12 reals.....	60		
Hoeing (twice), 6½ days each time.....	156	Total.....	788
20 kilograms of flowers of sulphur.....	18		
Spreading sulphur 3 times, by women.....	8	Total in American dollars.....	\$39 15
Stripping vines, 4½ days' work by women.....	18		

MODE OF PRESSING GRAPES AND MAKING WINE.

The value of wine in Catalonia being generally based on the deepness of the color, bruising by the feet is preferred (as strange as it may seem) to any wine-press, however perfect, for besides the advantage the first method has over the second, of more perfectly airing the must, foot-bruising breaks up more completely the outer skin of the grape in which the coloring matter is contained. The pressing is done either with bare feet (the men walking for hours and hours around in the small circle), which is preferable, as neither the seeds of the grape, nor the stems, which contain a great amount of tannin, are broken, or with hemp sandals especially made for the purpose.

If wooden fermenting-vats are used, the bruising is done in tubs from 3 to 5 feet wide and 2 feet high. When the pressing is finished the juice and stems are taken to the fermenting-vat either by running them off from the press direct, when the press-tubs are located higher than the vat, or in dippers, &c. When the vats are of masonry, the pressing is done on a platform of loose boards on top of the vats, the must running into the vats through the cracks. The stems and seeds and skins are also let down into the vats by raising one of the boards, care being taken that they spread out uniformly on the bottom of the vats, for which purpose the boards are lifted successively one after another.

As stated above, foot-bruising is preferred to the use of any mechanical press. These are, however, known and also used, two kinds being manufactured in Barcelona, and many of English, German, and Belgian make are offered for sale.

Must undergoes two fermentations, the rapid or tumultuous and the slow. The first takes place in the vats after coming from the press. In Catalonia these vats are generally made of wood, while in the rest of Spain, as I understand, earthen vats are commonly used. The wooden vats are easily set up, and cleaned without difficulty. They are filled to within 18 inches of the top, thus avoiding the spilling of the wine, when in complete fermentation the "head" is formed. The size of these vats differs, being proportionate to the quantity of the crop, for if, as is desirable, the fermentation is to take place simultaneously in the entire liquid, the vat should be able to be filled in twenty-four hours. In Catalonia the wines are more appreciated the drier they are; that is to say, the less unfermented sugar remains and the greater amount of coloring matter they contain. After the tumultuous fermentation the wine is decanted into casks, where it undergoes the slow fermentation. In many parts of Catalonia this decanting is still done with pails, whereby the wine often sours or loses aroma on account of coming in contact with

the air too long. Pumps, siphons, and sail-cloth hose are daily coming in more use. The slow fermentation in the casks, which lasts six months, is the last process, and the wine is fit for the market.

In the above description I have given preference to the methods of making wine by the smaller wine-growers and farmers, so characteristic to Catalonia.

#### AMOUNT OF EXPORTS, THE COUNTRIES WHERE TO, ETC.

To appreciate the importance of Catalonia as a wine-producing province, the following data are given, which may be considered exact, in spite of the backward state of agricultural statistics in Spain. Catalonia forms part of the basin of the valley of the Ebro River, the second in extent in Spain and first in the cultivation of the vine, to which are dedicated 526,067 hectares, more than double the extent cultivated with vine in the valley in Spain next in importance to the Ebro.

#### *Wine production in Catalonia.*

Provinces.	Extent.	Vineyards.	Wine production.	Average production per hectare.
	<i>Hectares.</i>	<i>Hectares.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>
Barcelona .....	778, 140	120, 139	2, 120, 000	17
Gerona .....	588, 380	47, 856	394, 716	8
Tarragona .....	634, 880	67, 478	1, 300, 000	18
Lerida .....	1, 236, 590	48, 605	527, 856	10
Total .....	3, 232, 590	294, 073	4, 342, 572	.....

About one-fourth of the wine produced is consumed in the country. The other three-fourths are exported to France and South America, with small lots to Russia and the United States, also Cuba and Porto Rico.

#### TRANSPORT AND COST.

Wines destined to South America are put in "pipes," casks containing 450 liters. Those for France are embarked from Barcelona or Tarragona to Marseilles, or transported over the Tarragona, Barcelona and French Railroad, which is the only railroad connecting Catalonia with the neighboring Republic. In these cases hogsheads of 605 liters capacity are used.

The transport from the inland regions to the railroad stations or the nearest port is done over the main public highways. The cost for this transport varies according to the greater or less distance and the state of the roads; an exact average of cost is difficult to determine. Nevertheless an approximate idea may be formed by stating that the transport of a hectoliter of wine costs  $1\frac{1}{2}$  pistareens (30 cents), when a cart drawn by two horses can carry a load of 968 liters, or of 605 liters when drawn by one horse, one trip a day being made. When two trips can be made the transport of 1 hectoliter is reduced to 20 cents. Sometimes when the roads are good it is more profitable to transport wine from the place of production to the port of lading or railway station in carts than by railroad, as the unloading at the receiving station and reloading at the terminus are avoided.

The price by railroad also varies according to distance and weight, the cost being from 20 cents to \$1 per hectoliter from one end of the province to the other.

Wine is about the only article of export on a large scale from Catalonia, as, notwithstanding the importance given to the cultivation of grain, the production is by no means sufficient to cover the needs of home consumption, which fact is proved by the large yearly importation at Barcelona and other ports of wheat proceeding from ports of the Black Sea and the United States.

FRED'K H. SCHEUCH,  
*Consul.*

UNITED STATES CONSULATE,  
*Barcelona, March 15, 1886.*

## MINES AND MINERAL PRODUCTION OF CATALONIA.

### REPORT OF CONSUL SCHEUCH, OF BARCELONA.

Minerals of different kinds having direct application to arts and industry are found in the Catalan provinces. Few, however, are mined, owing in some cases to their scarcity and in others to the total lack of means of communication and conveyance to bring the products to the centers of consumption.

The present study being dedicated to the mining industry of Catalonia, it is unnecessary to mention the various minerals that exist throughout the provinces, and therefore the only subjects treated will be those relative to mines in active operation.

With the exception of a deposit of sulphuret of lead in the Paleozoic sediments in one of the furthestmost spurs of the mountain range of the Gabarras, near Montras, in the province of Gerona; another of iron in the state of brown hematites among the Silurian loamy slates in the range of Gavá (Barcelona); another of lead in the form of nodules and small veins penetrating the Triassic limestones in the district of Vallirana (Barcelona); another of calamine composed of a layer running eastward between the dolomitic lime rocks in Pontons (Barcelona), and a few others of small importance, all of which are worked on a very small scale, it may be stated that the salt mines of Cardona and the coal mines in different sections, and belonging to different geological epochs, are the only ones of any importance under the point of view of "mining industry," and therefore the only mines worthy of attention for the object here proposed.

### SALT MINES OF CARDONA.

These famous mines, that form part of the Pliocene sediments in the western part of the province of Barcelona, are situated at the bottom of a small valley through which runs a stream tributary to the river Cardona, at the foot and to the south of Castle Cardona, and cover a surface of 1,519,927 square yards, their greatest length being 5,577 feet, the width varying from 750 to 1,650 feet. The salt deposit may be divided into two masses, one apparently superposed upon the other, although in reality united. The deeper mass, which is the one that is worked, is at the lower part of the valley, and here the salt exists in a state of great purity, being perfectly white. The upper mass is not so white, as it is formed by belts of different colors, due to the presence of metallic oxides, carbonous matter, clay in thin layers, and even small crystals of iron pyrites. Many deep furrows and gullies are formed by

the action of the meteoric waters between high and pointed peaks of strange aspect; and also caverns and hollows, called "*boflas*," in the interior of the mass of salt, are owing to the same cause. Owing to the extraordinary richness and purity of the deposit, the mines are worked in a manner that causes a great loss of the product. The working is done in the open air. Grades are formed, and ditches dug out on these, from 30 to 40 yards long and 8 to 10 wide, by means of pickaxes and bores, water being used to facilitate the operation. The amount of salt extracted yearly is insignificant to the possible yield, the actual yield not exceeding 50,000 hundredweight, which is consumed principally in Catalonia and Aragon. The salt is sold at the storehouse at Cardona at 45 cents the hundredweight.

*Workmen employed.*

For digging .....	100
For crushing .....	12
For grinding .....	8
Carpenters .....	2
Blacksmith .....	1
Total .....	123

*Wages paid per day.*

Diggers .....	\$0.45
Carriers:	
Adult .....	.40
Minors .....	.35
Crushers .....	.50
Grinders .....	.45
Carpenters .....	.55
Blacksmith .....	.50

MINERAL COALS.

Mineral coals are found in considerable abundance in different sections of the four Catalan provinces, especially Barcelona, Lerida, and Gerona, where some mines of great importance are worked. In the province of Barcelona, in the strata of the Cretaceous grounds to the north of the district of Berga, and in the western part of the province, in Segarra, abundant layers of lignite or brown coal are found between the Tertiary sediment. The former of the deposits extends in length some 15 miles by 5 miles wide. Within this perimeter four well-defined fields exist, two to the right (Serchs-Vallcebre) and two to the left (Nou-Lillet) of the river Lobregat. The veins run in thickness from 1 to 4 feet, and the average composition is—

Carbon .....	52	53
Volatile substances .....	41	43
Ashes .....	7	4
Total .....	100	100

The consistency of these "lignites" is remarkable. They can be exposed to atmospheric variations for a considerable length of time without crumbling. Although they contain small quantities of pyrites of iron and gypsum in scales, these impurities are easily removed. The lignites of Vallcebre differ from those found elsewhere, in that they do not burn spontaneously, not even when reduced to dust, such as the waste in the mine-drains. They burn easily in hearths of any shape, giving off in the beginning large quantities of smoke, producing a long, red flame, which becomes white when the combustion has developed the necessary heat. The pieces retain their shape till completely reduced to ashes.

The amount of lignite extracted from three galleries is small, the yearly yield not exceeding 30,000 hundredweight. Sixty workmen are employed. The smallness of the yield is owing to the lack of proper means of conveyance, making competition with foreign coal impossible. A railroad in course of construction between Maurea and Berga, already considerably advanced, will increase the facilities. This circumstance has encouraged one of the companies holding large mining properties to take steps to increase the yield to 200,000 tons.

Another deposit of lignite is found in the basin of Calaf. It is 62 miles distant from Barcelona and 166 from Zaragoza, connected with both by railroad. In these mines there are several layers superposed one on the other, slightly inclined to the west, in thickness of 1 to 4 feet. The fuel obtained from these mines may be divided into two classes, one of a dull black or dark gray, which burns a dark-red flame, giving off much smoke and leaving ashes of a violet hue; the other of a jet black color, glossy, that burns easily with a long, white flame, little smoke, and leaves little ashes and slack; the heating power is 4,933 units. The superficial extension of the basin (coal fields) is somewhat difficult to determine, but calculating the distance from San Pasa-lás to Venciana 13 kilometers, and from Castellfolit to Prats de Ray 10 kilometers, it comprises about 13,000 hectares. The only operation these coals undergo before delivery is a slight sieving, performed by women under sheds built near the mouth of the mine.

The yield of these mines varies considerably, the price of foreign coal bearing a great influence on the production, as also the greater or less activity of industry in general in Catalonia. In the last ten years the total production has been 664,447 hundred weight, or 66,444 per annum. The number of workmen employed has been 160 in average, men, women, and boys, the former being paid 60 cents, women 20 cents, and boys 40 cents per day. On account of the inferior quality of the coal the price at the pit is only \$1.40 to \$1.60 per ton.

Near San Juan de Subirats, also in the province of Barcelona, there is another deposit of brown coal in the Tertiary formation along the right bank of the river Noya from San Saturni to Martorel, another in San Marti de Tons to the west of Igualada, another in Casteltersol, &c.; but these deposits on account of their bad quality, together with the topographical situation, are completely ignored.

#### PROVINCE OF LERIDA.

Coal abounds likewise in the province of Lerida, but the deposits that might be improved for their quality are not considered on account of the total absence of communication and transportation. The deposits here referred to are those near Leo de Urgel in the northern part of the province. Some attention has, however, been paid of late, and although the investigations have not been of any serious nature, they have shown coal exceedingly abundant. The coal in these fields has been classed as anthracite. It is free from pyrites but contains traces of gypsum, burns a small flame and gives no smell, and its composition is:

##### *Select pit-coal.*

Fixed carbon .....	82.66
Ashes .....	5.40
Volatile matter .....	11.94
	<hr/>
	100 00
	<hr/>
Residue after reducing to coke .....	88.06
Specific gravity .....	1.39



*Coal not selected.*

Fixed carbon .....	67.85
Ashes.....	21.45
Volatile matter .....	10.70
	<hr/> 100 00 <hr/>
Residue .....	84.98
Specific gravity.....	1.51

The heating power of select coal is 7,000 units. It is reasonably surmised that when this part of the country, La Leo de Urgel, once becomes connected by railway, now in project, capital will be found to work these important coal fields on a large scale.

The province of Tarragona is very poor in mineral coal, while of the four provinces of Catalonia the one of Gerona is the most important, as in it are found the celebrated mines of pit-coal of San Juan de las Abadesas, which to describe, for this reason, have been left to the last in this report.

## COAL BASIN OF SAN JUAN DE LAS ABADESAS.

The rivers Ter and Freser, which rise in the Pyrenees, one in Lake Carenne, the other in the rocks of Puigmal, meet at the town of Ripoll and form, with a straight line joining the towns of Camprodon and Bruguera, a triangular space in the northwestern part of the province of Gerona, containing the coal basin. Coal may be seen on the surface for 2 miles in a narrow belt, say 1,100 yards wide, from the town of Bruguera, in the valley of the Freser, to Camprodon. The coal fields are limited to the north by limestone rocks and by slate, and to the south by sandstone and red marl belonging to the Triassic lands. The general direction of the stratified layers is N. 70° E. to S. 70° W.

The mining lands of San Juan are owned by the following companies:

Companies.	Surface owned.
	<i>Hectares.</i>
Faro Industrial .....	360
Railroad and Mining Company .....	388
Aurora del Pyreneo .....	890
Mr. Francisco Vila .....	30
Mr. Antonio Barnola .....	45

The only work of importance carried out till now has been done by the Railroad and Mining Company, and reaches a depth of 1,275 feet, the gallery of Faig and the bottom of the well (shaft) of the Barbara gallery forming the two extremes, the former at 4,550 feet above the level of the sea and the latter at 3,275. The length of the galleries does not reach half of the grant, which is for 2,850 yards. There are 22 layers, with a total thickness of 26 yards. The coal, as a rule, is dry and very crumbly, so that large pieces are very scarce, the greater part being composed of small fragments, which are pressed into bricks. The slate intervening frequently gets mixed up with the coal and has to be separated by washing. Other properties of the coal may be found in the annexed statement. The great advantage these mines possess is the absence of any inflammable, explosive gases, which so often cause trouble in the other European mines. Uncovered lamps are used.

*Properties of the pit-coal extracted from the coal beds of San Juan de las Abadesas.*

Zones.	Layers.	Specific gravity.	Carbon.	Ashes.	Coke.	Volatile substances.	Heating power.
		<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	
Northern..	Coal in the Faig mine.....	1.50	64.00	13.50	77.50	22.50	58.17
Center ...	Coal in the Tunco mine.....	1.39	70.20	7.00	77.20	22.80	67.21
	Northern layer, Balanca mine..	1.26	72.70	10.00	82.70	17.30	71.58
	Southern layer, Gallina mine..	1.65	66.00	10.00	76.00	24.00	68.77
	Northern layer, Gallina mine..	1.38	73.95	9.30	83.25	16.75	66.43
Southern..	Bottom of the Barbara shaft..	1.40	69.50	6.00	75.50	24.50	74.24
	Central vein of the Pinte mine.....	1.36	67.50	5.50	78.00	27.00	71.90
	Northern vein of the Pinte mine.....	1.36	60.00	13.00	73.50	27.00	65.65
	Southern vein of the Pinte mine.....	1.32	71.50	4.00	75.50	24.50	72.60
	Average.....	1.39	68.87	8.70	77.07	22.93	68.50

The general method of working the mines is the same as in other European mines, and the implements used also the same. About 200 tons are washed and sorted to size in ten hours, the sieves and other apparatus necessary for this work being moved by a "Sulzer" steam-engine of 30 horse-power. The greater part of the coal extracted from the mines of San Juan is in small particles; 70 to 80 per cent. is of this class. In order to be used it must therefore be agglomerated, or massed together; this is done by a "Mazeline" machine, shaping it into bricks. The carbonaceous matters are mixed with a certain amount of pitch or solid coal-tar powdered. Steam is passed through the mixture to soften the tar and even the coal when greasy, thus causing a perfect union of both substances.

These coal bricks are of rectangular-based prisms, with the four vertical edges rounded off. Their dimensions are, 12 inches long, 9 $\frac{1}{4}$  wide, and 4 $\frac{1}{2}$  high, and weigh 21 to 22 pounds. The Mazeline machine turns out about 25 bricks a minute, or 150 tons in ten hours. The pitch or tar used is the result of the distillation of the pit-coal in closed vessels, and is therefore an accessory product in the manufacture of lighting-gas. The average density and composition of the tar used is:

Carbon .....	73.96
Hydrogen .....	8.08
Oxygen .....	17.70
Ashes .....	0.57

#### MANUFACTURE OF LIME AND CEMENT.

For some years considerable quantities of lime and cement have been manufactured at San Juan, and are secondary products of this coal region. From Plaza Dulce to Toralles is a great extent of limestone lying above the red strata of Trias. The greater portion of this limestone is specially adapted for the manufacture of greasy lime, quick and slow cements, and puzzolanas, so useful for mason work. The manufacture of cement is carried on on a larger scale than lime. There are fifteen kilns side by side in one structure, each kiln being 10 feet wide at the mouth and 4 feet at the bottom. The stones of proper composition

for quick or slow cement are burned in these kilns, each giving about 9 tons in twenty-four hours.

The total production of coal, coal bricks, lime, and cement is given in the next table, for the five years, 1880 (the opening of the railroad) to 1884.

*Total production of the San Juan de las Abadesas coal mines during the years 1880-'84.*

Years.	Coal.	Coal bricks.	Lime.	Cement.
	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>
1880.....	7, 183, 950	4, 781, 986	1, 507, 580	617, 670
1881.....	24, 800, 815	16, 279, 081	1, 443, 450	3, 785, 800
1882.....	36, 374, 000	31, 368, 575	226, 400	4, 701, 270
1883.....	46, 528, 520	59, 741, 750	325, 775	5, 827, 000
1884.....	41, 214, 740	36, 641, 770	328, 500	6, 996, 500
Total .....	156, 102, 025	148, 813, 162	3, 831, 705	21, 928, 240
Average.....	31, 220, 405	29, 762, 632	766, 341	4, 385, 648

In order to determine the cost of mining the products of the Abadesas fields and placing the same for sale and delivery in the warehouse at the railroad station, the data of the year 1885 have been taken, and may be considered a fair general average.

*Total production of coal (44,000 tons).*

#### EXPENSES.

	<i>Pesetas.</i>
Manual labor, mining, and salaries of all kinds .....	319, 000
Material, taxes, &c. ....	48, 000
Classifying and washing part.....	48, 000
Material for same .....	12, 000
Total first expense.....	427, 000
Or cost per ton, 9.70 pesetas (\$1.94).	

*Extra expenses for making 32,000 tons coal bricks.*

	<i>Pesetas.</i>
Manual labor, salaries, &c. ....	16, 000
Material, including tar .....	215, 000
Total .....	231, 000
Or cost per ton, 7.21 pesetas (\$1.40 $\frac{1}{2}$ ); or total cost of brick-coal, \$3.34 $\frac{1}{2}$ .	

*Total production of lime and cement for 1885.*

	<i>Tons.</i>
Lime .....	600
Cement.....	7, 400
Total.....	8, 000
Expenses, 73, 000 pesetas; or cost per ton, 9.13 pesetas (\$1.84 $\frac{1}{2}$ ).	

Cost of transportation from mines to the warehouses at the company's railroad station at San Juan of 50,000 tons coal, coal brick, lime, and cement, 79,000 pesetas, or 1.58 pesetas per ton (32 cents).

*Résumé of total cost at warehouse, ready for sale.*

	<i>Per ton.</i>
Unwashed coal .....	\$1 97
Washed coal.....	2 26
Coal bricks.....	3 66 $\frac{1}{2}$
Lime and cement.....	2 16 $\frac{1}{2}$

*Prices sold for at warehouse.*

	Per ton.
Unwashed coal.....	\$4 00
Washed coal.....	5 00
Brick coal.....	5 50
Cement and lime.....	3 50

## WAGES PAID AND COST OF LIVING.

There are 320 working days in the year, of 10 working hours.

Working within the mines:	Per day.
Miners.....	\$0 75
Laborers.....	57½
Children.....	50
Foremen.....	1 00
Outside the mines:	
Machinists, &c.....	1 00
Firemen.....	60
Laborers.....	50
Children.....	30

The miners and laborers have to furnish their own lamps and oil. The former, costing 80 cents, is an open iron one, figured to last four years. The oil used is common olive; the amount used per day worth 3 cents.

The cost of living per day for a miner or laborer is 30 cents, and clothing per year \$14. All articles of food and clothing are furnished by the companies at first cost.

Taking the wages paid to a laborer working within the mines per year, and his expenses, the following result is shown:

By wages, 320 working days, at 57½ cents .....	\$184 00
To clothing.....	\$14 00
To rent and food, 365 days, at 30 cents.....	109 50
To lamp.....	20
For oil, 320 days, at 3 cents .....	9 60
	<hr/>
	133 30
Balance in favor .....	<hr/>
	50 70

## CONCLUSION.

From all that has been stated it may be deduced that Catalonia is rich in mineral coal of different kinds, from anthracite in the Ses de Urgel to the turf in San Carlos de la Rapida, some of the deposits being of very great importance, but that, on account of the lack of communication between the coal fields and Barcelona and other centers of industry, the production of fuel is far below the wants. The yearly consumption of coal in Catalonia is 500,000 tons, of which only 65,000 tons are of home production, the rest coming from abroad, principally England, from whence came to Barcelona in 1885, 320,000 tons, representing, at \$7 per ton, \$2,240,000.

FRED'K H. SCHEUCH,  
Consul.

UNITED STATES CONSULATE,  
Barcelona, June 15, 1886.

## AGRICULTURE AND IRON MINING IN BILBAO.

## REPORT OF CONSULAR AGENT URRAZA.

The information regarding labor which the Department of State asks, by circular of 15th July last, it is impossible for this agency to give with the details and in the form desired, as in none of the offices of the official corporations of this province have any statistical works been made which could be consulted, and to execute such work the agency does not possess the staff that would be necessary.

In consequence of this, and without being confined to the questions formulated, this report will try to give a succinct idea of labor in connection with the iron-ore branch, which constitutes the true and principal riches of this province.

## AGRICULTURE.

The territory of Vizcaya is completely mountainous, and there is no province in Spain in which property is so much divided, consequently, it is all leased in very small portions, which can easily be cultivated by each family with the sole aid of two or three servants. The rents vary from  $2\frac{1}{2}$  to 3 per cent. of the value of the property.

The irregularity of the soil and the small dimensions of the ground leased by each tenant prevent the use of any agricultural machinery.

The production is of small importance, and is not sufficient for the consumption of the province, particularly in wheat, which has to be imported from other provinces in Spain.

The food of the laboring class consists of two meals, one at 12 o'clock midday and the other at 6 o'clock in the evening, and they are generally composed of soup and "*puchero*" (a dish of vegetables boiled with lard), and their clothing is made from flax and cotton.

The average wages of the servants are from \$3 per month, with food, for those who live in the houses of their employers, and for the laborers who live separately and feed themselves, about 60 cents per day.

## IRON INDUSTRY.

Industry, always and almost exclusively limited to the production of iron, is now beginning to be developed, and the eight manufactories which are now in existence have absorbed completely all the work of the innumerable smithies which up to a few years ago existed in Vizcaya. Three of these, situated at the side of the river of Bilbao, at the foot of the mining district, have recently erected furnaces for the fusion of iron and steel, and they are largely increasing their machinery for the production of rails and plates of Bessemer steel, and in a short time the production could be doubled should the demand require it.

The average annual production is:

	Tons.
Pig-iron .....	180,000
Cast iron .....	34,000
Malleable iron .....	20,000
Total .....	234,000

The number of workmen employed is about 3,000 altogether.

The charcoal which these manufactories consume is produced in this province, the coals are imported from England, and the iron ore is obtained from the neighboring mining districts of Somorrostro. The pig-iron produced has till now been exported to the other Spanish provinces,

but the exportations to Italy, France, and Germany are every day increasing, and for the next year contracts have also been made for the United States.

#### IRON MINES.

The number of iron mines actually denounced in the province is about 300, which are situated in the mining districts called Somorrostro, Galdames, Arcentales, Sopuerto, Regato, Abando, Ollargan, Galdacano, and Guernica. The greater part of these mines have been known for centuries, but up to the year 1856 they were only worked for the smithies in Vizcaya, which used solely the class of mineral known as *vena dulce*, the consumption of which, up to that year, did not exceed 40,000 tons per year, the value of which delivered at the mine was 50 cents per ton.

The ores are classified as *vena*, *campanil*, *rubio*, and *calon*, the yield of which in metallic iron may be calculated as 58, 52, 50, and 43 per cent., respectively. All these are free from phosphorus and sulphur, to which no doubt they owe their great acceptance in foreign markets. The *calon* ore is rarely quoted in this market, and is generally exported mixed with some of the other classes.

The greatest exportation of ore was in the year 1882, when 3,692,000 tons were shipped for foreign countries and 44,000 tons for Spain, or altogether 3,726,000 tons.

All the work of taking out the ore is open to the sky, as in a quarry, so that the work of extracting the mineral is reduced to clearing it from the vegetable earth and from the rocks and sand, and afterwards, by great blasts of 10 meters depth, to blow up enormous masses of mineral, sometimes of 2,000 tons, by dynamite, and then breaking up these large blocks to the ordinary small size by the use of common powder. The cost of the dynamite, powder, and fuses is calculated to be about 8 cents per ton of mineral produced.

The total cost of a ton of clean mineral at the mouth of the mine varies from 50 to 60 cents.

In the extraction, cleaning, and carrying the mineral about 8,000 workmen are engaged, who gain an average pay of 60 cents per day.

The Government duties on mineral, payable by the proprietors of the mines, are 20 cents per hectare (about  $2\frac{1}{2}$  acres), denounced annually, and 1 per cent. on the value of the mineral delivered at the mouth of the mine, and those of the municipality of Bilbao are 25 cents per ton, payable when the ore is shipped.

The work of extraction is, at the present time, almost exclusively limited to the mines in the districts of Somorrostro, Galdames, Regato, Abando, and Ollargan, which, from their proximity to the river and port of Bilbao, permit of the mineral being embarked with more economy than from the other districts.

#### TRANSPORT FROM THE MINES.

The transport is effected by means of pack horses and mules, bullock carts, aerial wire tramways (Hodson, Bleichert, Otto, and other systems), floating chains, automatic inclined planes, and four railways terminating at the river of Bilbao, one at the bay of Porina, and another which starts from the Esperanza mine and terminates at the deposits of Ortuella, where is situated the upper station of the railway of the Pro-

videncial Deputation, traversing one of the shoulders of the Triano Mountain.

The transport by pack animals and bullock carts exists from various mines to the before-mentioned railways, a distance of from one to three kilometers, there being employed in this service about two hundred horses and five hundred bullock carts, the cost per ton being estimated at 50 cents.

The aerial tramways and inclined planes are also used, for the greater part, for the carriage of the mineral from the mines to the railways. The number of those actually working is upwards of fifteen, the length of the former varying from 1 to 3 kilometers, and the cost of their construction averaging \$14,000 per kilometer. The quantity carried by them varies from 20 to 30 tons per hour, 20 to 25 workmen being employed in the operations of loading, discharging, and working of each tramway, the cost being about 15 cents per ton carried per kilometer. The latter, viz, the inclined planes, have a length of from 165 to 1,100 meters; each employs from 9 to 37 workmen, carries daily from 235 to 1,500 tons, with an expense of from 4 to 5 cents, their cost of construction having been from \$18,000 to \$231,000.

The five railroads dedicated to the carriage of the mineral from the deposits to the loading places are the following:

The railway of the Deputation starts from the foot of the Triano Mountain and terminates at the river of Bilbao, in the place called El Desierto. It has a length of 8,400 meters; a difference of level between its extreme points of 56 meters; five loading-drops working and two in construction, and is able to load into vessels up to 7,000 tons in twenty-four hours. The highest tariff for the whole line is 45 cents per ton, and its cost for construction amounted to about \$1,000,000.

The railway of the Orconera Company (Orconera Iron Ore Company, limited), extends from Gallarta to the river of Bilbao, at the point called Luchana. Its length is 12,000 meters; the difference of level between its extremes is 200 meters; it has four loading-drops, and can load up to 8,000 tons per twenty-four hours. The maximum tariff is 60 cents per ton, and its construction cost \$1,900,000.

The railway of the Franco-Belga Company starts from the rivulet Granada and also terminates at Luchana. It has a length of 7,000 meters; a difference of level of 28 meters; two loading-drops working and one in course of erection, and it can load 3,200 tons in twenty-four hours. The tariff for carriage is 60 cents per ton, and it cost \$576,000 to construct.

The railway of Galdames (Bilbao River and Cantabrian Railway Company, limited), extends from the Berango mine to a place called Sertas, near the mouth of the Bilbao River. Its length is 22,000 meters; the difference of its level is 125 meters; it has four loading-drops, and can embark 9,000 tons in twenty-four hours. The tariff is 75 cents per ton, and its construction cost \$3,500,000.

The Railway of Messrs. Maclennan, starts from the mine San Julian de Muzquiz and terminates at Poveña. It has a length of 3,600 meters, with an incline of 1 per cent. The cars descend by force of gravity, and the empty wagons are taken up by bullocks. It is constructed to carry 600 tons per day. Its quay at Poveña can load at the rate of 250 tons per hour, and the total cost amounted to \$225,000. This is a private railway, and only carries the mineral of its proprietors.

In the cost stated of the above-mentioned railways there is included the price of the ground, fixed and movable material, houses, quays, loading places, and dredging the respective ship-loading berths.

## SUMMARY.

The exportation for the current year will be about 3,300,000 tons, which, with 470,000 tons consumed in local manufactories, will make 3,770,000 tons in all, the value of which, at the average price of \$1.60 per ton, which has ruled this year, amounts to \$6,032,000, and the work has given employment to 9,100 people, as follows:

Engaged in extracting, cleaning, and carriage .....	8,000
At the tramways .....	350
At the inclined planes .....	150
At the railways .....	600
Total .....	9,100

A. URRAZA,  
*Consular Agent.*

UNITED STATES CONSULAR AGENCY,  
*Bilbao, December 15, 1885.*

## COMMERCIAL INTERESTS OF CHINA.

## REPORT OF CONSUL SEYMOUR, OF CANTON.

I supply herewith some items of commercial information from this consular district, which embraces the two southern provinces of Quangtung and Quangsi, in the Empire of China, where no data, records, statistics, or reports are to be found showing the nature and magnitude of the commerce of nearly thirty millions of inhabitants, who are remarkable for their industry, and possess productive soil and abundant facilities for domestic and foreign commerce.

The province of Quangtung has a coast line of about 1,000 miles, and numerous water-ways which are navigable for hundreds of miles, and thus Canton is a favored trade center.

## WHY TRADE STATISTICS ARE NOT COMPLETE.

The only records that are kept of the commerce of this important port, or of other ports in the Chinese Empire, are those of the Imperial Maritime Customs of China, which is probably the most perfectly organized and best conducted civil service in the world; but as it only looks after the imports and exports by foreign ships, and as there is no record kept anywhere that shows the imports and exports by native craft or junks, the commercial statistics of Chinese ports are incomplete, and reveal only a portion of the commerce between the various ports of China, or between China and other countries.

## NATIVE JUNKS VERSUS FOREIGN SHIPS.

On this point the present able and accurate commissioner of customs at Canton, Alfred E. Hippisley, esq., in the first paragraph of his Trade Report for 1885, says:

It has been frequently pointed out that the merchandise coming within the cognizance of this office—that is, the merchandise carried by foreign vessels—forms but a fraction of the trade of Canton, the bulk being monopolized by the large fleets of junks regularly running between this port and Hong-Kong, Macao, and the neighboring ports on the coast.



Besides the ordinary export duty and import duty at the custom-houses of both systems of collecting revenue—the Imperial Maritime system, under management of foreign officials, and the “native” system, which “farms out” the various revenue districts to Chinese contractors—there were imposed special taxes, or “likin” dues, on many commodities, which were not as easily evaded at the imperial or foreign custom-houses as at the native contractors’ collecting offices, for the junks sought routes through creeks which could not always be carefully guarded. Merchants have verified to me the surprising statement of the Customs Trade Report, which says:

Many articles which would otherwise have been purchased at Canton, and sent through this office to Hong-Kong for transshipment abroad, have, during the past year, been bought, in the first instance, at Hong-Kong, or, if bought here, have been settled for delivery in Hong-Kong, sellers in some cases—*e. g.*, common teas—even finding it cheaper to ship the goods by junk to Hong Kong, and to store them there for a week or ten days pending the departure of the carrying vessel, than to pay both tariff duty and likin tax. To this fact is attributable, in part, the diminished export shown in our statistics of cassia, preserves, matting, and fire-crackers.

A junk strike is now in full force and operation to resist some new demands upon the junk traffic; and without the slightest appearance of any excitement or turmoil, the fleets of junks in the Canton, Hong-Kong, and Macao triangle quietly suspend business and “tie up.”

#### OBSTRUCTIONS TO NAVIGATION.

While this double or duplex plan of collecting revenue is in operation, viz, by employing foreigners to collect duty on merchandise imported and exported by foreign vessels, and by selling out to Chinese contractors the collection districts for merchandise imported and exported by native junks, the anti-foreign viceroy of these two provinces has adopted a policy which practically bars out foreign ships of large tonnage from approaching nearer to Canton than Whampoa anchorage, 11 miles below Canton. This is being done by destroying the southern or deep-water ship-channel between Canton and the sea, and leaving open only the shallow and narrow junk-channel, which, at the “Salt Flats,” a few miles below Canton, has only 6 feet of water at low tide, and only about 11½ feet at high tide.

In a time of peace, when other nations are expending millions of dollars to improve navigation of harbors and rivers for commerce, the Chinese authorities at Canton have recently thrown hundreds of junk-loads of stone and driven piles to hold those deposits of stone in place to obstruct and destroy the ship-channel of the river, and neither consular nor diplomatic remonstrance has yet been able to stop what is clearly forbidden by international law and comity, and prejudicial to the commercial interests of foreign nations, and detrimental to the interests of the most important port of Southern China.

In the midst of such conditions and influences, commerce seems to be cast away from consideration in the apparent effort to exclude foreigners from participation in its benefits at Canton.

Not only has the southern or deep-water ship-channel between Canton and the sea been closed by obstructions since the summer of 1884 (soon after hostilities commenced between France and China), and those obstructions extensively increased during July, 1886, but the northern or narrower and more shallow junk-channel has become extremely difficult to navigate by foreign steamships and vessels of lighter draught, in consequence of large fleets of salt-junks being allowed to rendezvous and anchor at the Salt Flats, a few miles below Canton, and obstruct

the fair-way with chains and ropes across the channel to such an extent as to endanger foreign steamships, which are sometimes compelled to maintain considerable speed for steerage when going with the wind, current, and tide.

The U. S. S. Alert was thus jeopardized and seriously incommoded while entering and leaving the port of Canton, on March 20 and April 3, 1886, when in charge of Chinese licensed pilots.

If complaint is made to the Chinese authorities that the fair-way of the junk-channel is obstructed by the cables of junks crossing the channel, some one from the salt commissioner's yamen is sent to investigate matters, and a few weeks later the viceroy informs the complaining consul that the salt-junks are in their proper places, and the consul is requested to notify commanders of steamships or foreign vessels to adopt less speed while passing through this crowded channel.

#### UNJUST DISCRIMINATION.

The foreign consuls at Canton have this summer been requested to give, but have deemed it their duty to withhold, their assent to proposed new harbor regulations, which impose many restrictions upon foreign ships that are not imposed on native vessels, and which make no provision for keeping the fair-way open in the only available channel, which is strictly a junk-channel.

One of those restrictions prohibits foreign ships from bringing kerosene nearer to Canton than one mile below Whampoa, or about twelve miles below Canton; while Chinese junks come into the harbor of Canton, opposite the city and shamien, and native cargo boats loaded with that commodity enter the canal between Canton and the "foreign settlement," and go into the smaller canals of the city without any hindrance.

Thus under the pretext of protecting Canton from destruction by a great conflagration of kerosene, the transportation of that article is exclusively monopolized by the native junks; while by this process the entire importations of kerosene are treated as being in Chinese hands, and therefore subject to any special or "likin" tax the Chinese authorities see fit to impose, or authorize to be imposed, when selling or "farming out" to Chinese contractors the native collection districts for duty and "likin," or special taxes, not only between the seaboard or coast ports and Canton, but between Canton and the interior.

#### TRAFFIC WITH THE INTERIOR.

The importance of securing better arrangements for sending needed foreign commodities into the interior and into the two southern provinces of Quangsi and Yunnan, from Canton and Pakhoi by well-established trade routes, cannot be fully appreciated; but if the system of transit-passes for foreign articles of merchandise sent to the interior markets and places of consumption were fairly in operation, there would follow a largely increased demand for many kinds of imported merchandise; but such is not the case, as has been clearly demonstrated by negotiations during the present year between the legations and the Imperial Government at Peking, and between the consuls and the viceroy of the provinces of Quangtung and Quangsi at Canton, the measures agreed to at Peking for better facilities in regard to interior traffic having been utterly ignored by the viceroy and other Chinese officials at Canton.

The viceroy insists upon his right to locate likin stations where he deems them desirable, and to change their locations from time to time,

as the operations or routes of traffic may demand, and declines to designate their localities or to state their numbers or the aggregate of likin taxes between any two given points, and thus defeats the arrangements agreed upon at Peking to facilitate traffic in foreign commodities between the sea coast and the interior, notwithstanding the legations sent out to the various consulates circular notices of what seemed a very desirable improvement on the system in actual operation, which prevents any one from finding out what will be exacted on any trade-route as likin tax or other special tax on foreign shipments to the interior.

In some of the other provinces of the Chinese Empire where the ruling authorities are less intensely anti-foreign in feeling and policy, lists of the likin stations and amounts of likin required at stations or routes between the treaty ports and specified points in the interior have been supplied and published, but there seems to be no means by which viceroys in their respective provinces are or can be compelled to abide by any agreement or plan adopted by the Tsung-li yamen (foreign office) and legations at Peking.

#### MINING ENTERPRISES.

It will be remembered that about one year ago an eminent Chinese statesman named Tso died and left, as his last counsel and advice to his devoted countrymen, certain recommendations concerning the national defenses, mining, railway, and educational enterprises, which attracted much attention, not only in China but throughout the world, as an indication of progressive ideas from a man who had been noted for conservatism as well as for wisdom, patriotism, and courage. Mining enterprises are receiving much attention in various parts of the Chinese Empire, and as valuable mines are known to exist in the southern provinces, a board of mines has been established by the Chinese authorities at Canton to promote mining operations for silver, copper, tin, iron, &c.

The board of mines is composed of high officials of the province of Quangtung, whose published mining regulations provide for abundant opportunities to "squeeze" the greater portion of the profits of any successful mining enterprises into the mandarin's coffers. At the very outset it is distinctly and clearly announced in the mining regulations, and in the charter and prospectus of every company organized for mining business, that "foreigners and native converts to Christianity are prohibited from owning any share or stock in any such mining company." This point is carefully guarded by a requisition that before any privilege or right is obtained for mining operations "petitioners desiring to acquire such franchises shall be required to affirm that they are not converts to Christianity, and that no foreigners will be permitted by them to hold shares in the proposed mines."

If objections are urged by people in the vicinity of sites selected for mining operations, that tombs or dwellings or geomantic influences will be destroyed or disturbed, and if these objections are found to be valid, the place selected must be abandoned and a site elsewhere selected.

If a person becomes possessed of a mine of exceeding richness, which requires increased taxes, the matter will be represented in the proper quarter, and a recognition be made by conferring on the owner of the mine an official title.

Should a mine in any particular district prove to be of extraordinary richness and value, the fact will be reported to the Emperor, that a reward may be conferred on the magistrate of the district.

These are some of the mining conditions. It is well known that the iron mines of the northern province of Shansi have been operated for over a thousand years.

The chief benefits to be derived by foreigners from the inauguration of these Chinese mining enterprises will be in supplying the professional talent required for practical and judicious management of mining operations, and in supplying the requisite machinery for developing the mining interests and business.

A qualified and thoroughly competent superintendent or engineer of a well-organized company of native capitalists, if rightly commended to their confidence, will not be likely to find his services valued at less than \$6,000 per annum, with liberal allowance for assistants and servants. Such a man should be able to control the supply or choice of machinery for use in the mines.

This fact suggests that both talent and skill should be represented in the applicants for, or seekers of, the benefits to be derived by foreigners from Chinese mining enterprises and operations.

#### ARMY AND NAVY AND COAST DEFENSES.

Over \$30,000 per annum are paid at Canton for German military instructors. Germany seems to have most favorably impressed the Chinese officials in regard to military matters, as seen in the employment of competent and experienced German officers from the engineering, artillery, cavalry, infantry, and torpedo branches of the German military service to instruct, at various points along the coast of China between Canton and Tien Tsin, the Chinese military forces about war tactics, and also in the purchase and use of German rifles, cannon, and other implements of war, as well as in the acquisition by the Chinese Government of formidable war ships from Germany, with Krupp's most powerful guns and projectiles. The viceroy estimates the Quangtung defenses will cost \$5,000,000.

#### RAILWAYS.

It is announced that the Imperial consent has been granted for the construction of the experimental line of railway on the route by which the conquering Tartars entered China—a short line only, and in the northwest.

Several wealthy and influential syndicates from the western nations have already sought Chinese favor in regard to the contemplated railway enterprises in China.

China cannot much longer postpone the introduction of railways, which are needed for army transportation, since her frontier troubles demand quicker concentrations of military forces than can be secured by former facilities; but with the construction and operation of railways the Chinese fear there will be increase of foreigners, which is a serious objection with the Chinese, and may be regarded as second only to their objection against molesting the tombs of past generations.

In the mean time the official magnates of China are withholding the grand prizes in the railway lottery or scheme, and flourishing them out of the reach of supplicating foreigners, or foreign supplicants, with an evident enjoyment of something akin to the sport of youth, who compel certain pets to strike attitudes, "speak louder," and "roll over" before the tidbits are dispensed to the beseeching and obsequious animals.

One of the strong European competitors for these Chinese prizes is credited with having already distanced all rivals, by throwing overboard

missionaries and native converts to Christianity, and by consenting to the permanent obstruction of navigable rivers for the exclusion of foreign ships from treaty ports; but before winning the coveted prizes possibly a further concession may have to be made to lubricate the internal machinery.

#### CURRENCY AND EXCHANGE SERIOUSLY OBSTRUCTING IMPORTS OF FOREIGN COMMODITIES INTO CHINA.

A serious obstacle to importations of foreign commodities into China is the present condition of the exchange, based on the silver currency, which has for the past two or three years undergone such depreciation in China and other Asiatic countries, including India and Japan, with intermediate and less important countries of the East, as to require four silver dollars here to equal three gold dollars in Europe or America.

Exports from China to Europe and America are somewhat stimulated or encouraged by the premium on gold, or on drafts, or bills of exchange on gold-paying countries, against shipments to the European and American markets, as the purchasing power of silver in these silver-currency countries is as yet imperceptibly affected by the rates of exchange between China and foreign countries. With no desire to offer any comments on financial or monetary problems, these facts are recorded as pertinent to commerce, and are worthy of consideration and study.

An interesting feature of the increasing disparity between gold and silver in China (and in other Asiatic countries) is the relation sustained or existing between lenders and borrowers of money, since the assets of banking corporations in the East, owned by European capitalists, whose capital has been transferred from Europe to Asia, have been shrinking, on the basis of gold, faster than interest accumulated. And, too, depositors in banks find that their 5 per cent. interest on fixed deposits for the past four years scarcely covers the depreciation in the value of the sum originally deposited if convertible or converted into gold in Europe or America. And, by the same causes, a debt incurred four years ago for 100 silver dollars, which was then the product of 90 dollars in gold in China, can now be canceled by the payment of 100 silver dollars, which can be bought now for 75 dollars in gold, or in European or American bills of exchange payable in gold. The surplus or difference of 15 dollars in gold, which will buy 20 silver dollars, pays four years' interest at 5 per cent., and the creditor finds his income a myth.

These complications are thus interfering with commercial operations, and should be taken into consideration by Americans and Europeans who contemplate shipments to China.

#### NEW PORTS ON THE SOUTHERN FRONTIER.

Under the treaty of June, 1885, between China and France provision was made for the establishment of two trading marts on the southern frontier of China. One of those trading marts is to be behind Langson, and the other behind Laokai, and from and through these two frontier trading marts France contemplates diverting trade from the two southern provinces of Quangsi and Yunnan, which have been tributary to Quangtung province, and to Canton as the chief market and port, as well as financial center of the south.

It should also be noted that the treaty, besides giving France the opportunity to tap the southern provinces of China, also permits and stipulates that their Chinese customs tariff shall be more favorable or

lower than at the treaty ports of the coast. Whether France will succeed in diverting trade through Tonquin and away from Chinese routes time only can determine.

#### THE FLOOD OF 1885 AND ITS EFFECTS.

The terrible inundation of June and July, 1885, in the province of Quangtung, which was the severest flood known in Southern China during the past half century, was described in my dispatches to the Department dated June 17, 1885, and July 29, 1885; but its effects were serious upon rice crops and food supplies generally, and also upon the production of silk, as the rivers broke their banks and inundated large tracts of country, extending hundreds of miles, carrying away crops, soil, and buildings, and destroying over 20,000 lives.

The demonstrations of practical benevolence among natives and foreigners elicited by this widespread calamity reflect honor and credit upon the generous donors of money, food, clothing, and necessary supplies for many thousands of sufferers, whose losses and deprivations were uncomplainingly and heroically endured, under circumstances which might have crushed out all hope or expectation of recovery in any people.

#### GUILDS.

The thoroughness of the organizations of guilds, and their resources, efficiency, and promptness of action in any emergency were manifested during the efforts to gather and send relief to the distressed people of the inundated districts of Southern China in July, 1885.

These guilds extend through and embrace every branch of commerce and every department of industry, and are maintained and conducted without any clatter or friction. The powers which guide their operations are invisible and silent, but when the occasion calls for prompt and decisive action, all the wheels in the machinery of the guild concerned stop or move as if an electric touch of some controlling force had simultaneously communicated to every member of the guild an edict which is received and obeyed with utmost obedience as if each one's existence depended upon the combined action of all.

Differences growing out of business transactions are adjusted by the arbitration or ruling of the guild to which its members belong, and resistance against the demands of outsiders is made effective (if a reasonable basis exists for resistance) by the individual who is assailed handing his case over to the guild of which he is a member, and acting under the advice of the chosen rulers of the guild.

The mandarins find it difficult sometimes to dictate harsh terms against the guild combinations, for it is no easy matter to force them to do what they disapprove. Any expense or loss sustained by any member of a trade guild in resisting what he deems an unjust demand is defrayed out of the treasury of that guild, if he obeys the rules of the guild and makes no movement or settlement without the sanction of those in control of the guild. Guilds, therefore, become formidable and necessary organizations in a country where law is the caprice of mandarins, and where the individual would be powerless if compelled alone to guard his interests.

#### FOREIGNERS DEPENDENT ON NATIVES.

Foreign merchants in China, with millions of dollars of capital at their command and fleets of ships in waiting for cargoes of Chinese products destined to European and American markets, have never yet

been able to fix the price of these Chinese products, but have ever and always been compelled to submit to the prices and terms of the tea-guilds and silk-guilds and junk-guilds and other guilds, and do their business in China through native compradores, and comply with Chinese arrangements generally, and all because of the inability of foreign merchants and capitalists to cope with or override or break down the influence of the trade and other guilds of China.

Such has been the experience of all engaged in commerce in China for the past century.

The largest and wealthiest banking institutions established by European capitalists in China and along the Chinese coast are not able to dispense with Chinese compradores, through whose hands all money must pass, notwithstanding an abundance of foreign clerks are at hand.

#### TRADE ITEMS.

Business at Canton has revived wonderfully during the last half of 1885 and the first half of 1886, and commerce seems to be recovering from the effects of the Franco-Chinese war.

#### IMPORTS.

Opium continues to be an important item. Some estimate of the extent of the traffic in opium at and near Canton may be formed from the fact that the contract or franchise or monopoly of collecting the likin on crude and prepared opium in this province of Quangtung is farmed out or sold by the authorities to native contractors, who pay into the treasury of the province the sum of 850,000 taels (\$1,250,000) annually on a six years' contract, and the contractors bind themselves to defray all expenses for salaries, for steam cruisers, and for preventive service generally, which amount to about \$350,000, amounting in all to about \$1,600,000 per annum, which is exclusive of duty on opium, and taking in only the likin tax of about 55 taels per picul of 133½ pounds, or about 62 cents per pound for likin.

As the likin contractors on opium are supposed to find profit in their monopoly, it must be derived from likin on an excess of 20,000 piculs (or 1,333 tons), whereas only one-third of that amount was reported at the four Chinese foreign custom-houses in Quangtung province during 1885.

#### *Receipts and exports at Canton in 1885.*

##### RECEIPTS.

Cotton yarn .....	\$1, 700, 000
Raw cotton (mostly from India) .....	1, 000, 000
Cotton goods .....	900, 000
Woolen and worsted goods .....	1, 000, 000
American kerosene .....	250, 000
American flour .....	225, 000
American wheat .....	150, 000
American ginseng .....	100, 000

##### EXPORTS.

Raw silk .....	5, 300, 000
Silk goods .....	5, 800, 000
Tea .....	1, 200, 000
Fire-crackers .....	400, 000
Matting .....	375, 000
Bangles and buttons (to India) .....	540, 000
Preserves and sweetmeats .....	250, 000

## CHINESE MANUFACTURES.

The Chinese throughout the Empire seem to be increasing their manufactures. Especially is this noticeable in the steady increase of importations of raw cotton, cotton yarn, and thread, which rose in 1885 to \$2,000,000 for raw cotton and \$11,806,818 for cotton yarn and thread, or about \$14,000,000 for raw cotton, yarn, and thread which were used in Chinese manufactures. Of those \$2,000,000 of raw cotton, Canton received one-half.

## FREIGHTS.

During the past year ocean freights have been very low. Sailing-ships have taken Chinese cargoes from Hong-Kong to New York at 15 to 20 shillings sterling (\$3.75 to \$5) per ton of 40 cubic feet. Steamships continually take freight from Chinese ports to New York or Hamburg, via London, at less freight than is charged for delivery in London, notwithstanding the transshipment in London and Atlantic freight, or the freight to the German port, add very much to the expenses of the carrier. However, this is a part of the combined scheme of the "Conference Steamship Companies" to break down competition. It necessarily affects transcontinental transportation interests in America, and cripples American ship-owners seeking direct trade between China and America.

CHARLES SEYMOUR,  
*Consul.*

UNITED STATES CONSULATE,  
*Canton, August 4, 1886.*

## MINERALS IN THE PROVINCE OF CHIHLI.

## REPORT OF CONSUL BROMLEY, OF TIEN-TSIN.

The province of Chihli, of which Tien-Tsin is the commercial capital, and the seat of the viceroy, is extremely rich in minerals of various kinds; but with the exception of Kaiping, some 80 miles northeast of Tien-Tsin, none are worked by foreign machinery under foreign management. The province on the east, north, and west is mountainous; to the south of these mountain ranges lies the great plain of Chihli. The mountains contain coal of no less than four distinct varieties: Anthracite, equal to the best Pennsylvania; soft anthracite, used by the body of the people, mixed with clay, in their small stoves; bituminous coal; and semi-bituminous coal. Samples of these two named coals were sent to England by Admiral Hope in 1860, and reported upon as being equal, if not superior, to the best Welsh variety.\*

## IRON ORE.

The brown hematite is found extending from south to north of Shansi, the province adjoining Chihli, and from the south of Chihli to the north and east of the province is to be found the same description of iron ore.

\* For fuller reports on these Chinese coals the reader is referred to the accounts of them by Mr. Raphael Pumpelly, published by the Smithsonian Institution.



On the northeastern borders of Chihli the black magnetic ore is found. This ore increases in richness of quality as we go eastward towards Manchuria, the best of it producing 70 per cent. of metallic iron, while on the south and west of the province the brown hematite gives 53 per cent. of metallic iron. This iron-stone is found there in the limestone formation, and close to it on every side is found coal suitable for smelting the iron-stone. Fire-clay is also found in abundance, close to which again are numerous seams of clay-band iron-stone.

This part of the south of the province may be compared to Bilbao, in Spain, as regards the quality of the ore and the low price at which it could be worked; in both places blasting on the mountain side being all that is required. Chihli has the advantage over Bilbao in that it has abundance of good coal surrounding the iron-stone for smelting purposes, while Bilbao has no coal of its own. A good mercantile lead ore is found in various parts of the mountain; it contains only the slightest trace of silver.

#### COPPER ORE.

To the northeast is found a great abundance of copper ore, and there have been attempts at working under foreign superintendence, but the native owners being without sufficient capital, little or nothing of consequence has been done in regard to its working. So-called silver mines are in the same district; the impression, however, is, that the silver has not yet been found, and the only result is that those who put money into them have lost it. The Government works mines of gold in the northeastern district, but they are so guarded that foreigners are not permitted to inspect them.

The mineral resources of this province in coal and iron are so great that were the Chinese but a progressive people, no syndicates with their many millions of money needed to have troubled themselves to have come to China for the purpose of asking the Chinese to borrow money of them, and to exchange the same for railway materials, iron-clads, &c. China in this province has everything within itself for the making of rails, and everything else, whether of iron or steel, and at a cost no foreign nations could compete with, laid down here.

The chance, if chance there be, of a foreign syndicate doing a stroke of business in North China will lie in the inexperience of the officials, some of whom it would no doubt pay personally much better to borrow the money and import the foreign material of all kinds and shapes than if the rails, iron-clads, &c., were made from their own home-made iron and steel, which, as proved by analyses of the highest order, may be made of all descriptions of the highest class.

The officials, while in office, all belong to other provinces than those they serve in; and as their term of service is usually but short they endeavor to make hay while the sun shines, irrespective of the laboring population of the province, who would greatly benefit by industrial enterprises being undertaken.

#### RAILWAYS IN NORTH CHINA.

It is reported that syndicates have offered to build railways here for a very small sum per mile, but the plain of Chihli, although of great extent, is in many places too low and too flat to admit in these places of railways being cheaply made. Not unfrequently the country is flooded and to a great extent covered by the heavy rain. Roads will therefore require

to be raised considerably, and numerous openings for the water will be necessary. Again, a road from Peking to the south, say Hankow, when in close proximity to the mountains, will require to be a raised road, with numerous openings for the water to escape when coming down in torrents from the mountains. A railway from Tien-Tsin or Peking to Hankow now presents no engineering difficulties. Even the great Huang Ho, or Yellow River ("China's Sorrow"), may be crossed without difficulty in certain places where foreigners have crossed it. No tunnels are required and few or no cuttings between Tien-Tsin and Hankow; but bridges in great numbers, and some of considerable size, will be required; the crossing of the waters will be the cause of considerable expense. Water-courses which in the dry seasons are only a few feet in width show by the sand that the waters cover the land in many places to a considerable width during the rainy season.

#### AGRICULTURE IN THE PROVINCE OF CHIHLI.

The plain of Chihli is in many places exceedingly rich and fertile, and by an improved system of husbandry might be made in general very highly productive. At present, even with the few appliances the people possess, the crops in a good season in places are truly wonderful. Between Tien-Tsin and Peking "kaoliang," or millet, was seen lately some 16 feet in height, completely hiding the country from view. Towards the sea-coast on the south the soil is a heavy clay and is saline, and but little used for cultivation. Very large areas of the province now unproductive might be made highly productive by means of drainage and irrigation, which the country is well suited for. The rivers in the province are very numerous, and were they carefully looked after the waters might be made productive of great wealth to the province. As is now the case, we have too often either droughts or floods.

From this slight sketch of the province of Chihli it will be seen that China possesses within herself all material wealth to make her independent of foreign countries, more especially in the matters of coal, iron, and cotton. The day will now not likely be long deferred when China will arise from her sleep of ages to find herself the equal at least in respect of those she is now dependent upon for foreign manufactures and appliances of various kinds. Many causes are tending to this end. The port of Tien-Tsin is the outlet for goods and the distributing center for the whole of this province of Chihli, and it supplies also a great part of the provinces of Honan, Shansi, and Shensi on the south and west, Shantung on the east, and Mongolia on the north. Our water communications enable us to lay down goods cheaper than they can be laid down from any other open ports. Our exports of wools—camels', goats', and sheep's—have greatly increased of late, the export in 1885 being about 2,700 tons. By the introduction of a few fine woolled sheep into North China the quality of our wool might be greatly improved. The native population of Tien-Tsin may be safely stated at 600,000.

GEO. T. BROMLEY,  
*Consul.*

UNITED STATES CONSULATE,  
*Tien-Tsin, May 15, 1886.*

**RESOURCES AND TRADE OF BUSHIRE.***REPORT OF CONSULAR AGENT MALCOMB, OF BUSHIRE.*

Bushire, the largest and most important seaport town in the Persian Gulf, is situated at the northern extremity of a sandy peninsula. According to tradition Bushire first became inhabited about 212 years ago, by a handful of Arab fishermen. It is, however, evident that a comparatively important town then existed about six miles distant, called Rishire, now a village under the same name, but bearing appearances of antiquity, if not of grandeur. Close to this village is an ancient fort, passing under the name of Kalaa-è-Rishire (fort of Rishire). The epoch of its origin is uncertain, but it is supposed by some savants to be Babylonian. On a mound in the plains of Rishire some bricks with cuneiform inscriptions have been discovered.

Bushire, owing to its more favorable position in its anchorage, gradually increased in population, and, with the subsequent establishment, by the English Government, of a political commercial factory, became an important, attractive, and an interesting place. Its trade originally was entirely local and confined to the Arab littoral, but in time it was extended to India by native crafts (buglows), and in spite of the ravages of the pirates large profits were cleared. It, however, did not assume any appreciable proportions until about ninety years ago, when its relations were further extended to the Red Sea, Java, and through India to Europe, China, &c.; and Southern Persia, then as now, was mostly dependent on Bushire for its supplies of foreign goods.

An Arab sheikh of the family of Maskoor, through the ferocity of his character and strength of his tribe, assumed the governorship of Bushire, exercising absolute sway over life and property. The successive scions of this sheikhsip continued to rule over Bushire and exercise the same power. The Shah's Government had little or no control over Bushire, and the sheikhs were perfectly independent and at times in open revolt. It was only in the year 1854 that the Shah's troops, after laying siege to Bushire, occupied the place, when for the first time a duly appointed Persian officer assumed charge of the government of the town and its dependencies.

Bushire has been several times attacked and pillaged by pirates and the surrounding tribes. In the year 1839 a hostile demonstration was made by the British Government, which occupied the island of Kar-rack, and again in 1855 war was declared by Great Britain against Persia, and Bushire was the chief seat of war.

**DEVELOPMENT OF TRADE.**

The gradual development of the trade of Bushire is mainly due to the British and other foreign exertions and enterprise.

In the year 1862 steam communication was first established between Bombay and the Persian Gulf by the British India Steam Navigation Company, then working under the designation of the Calcutta and Burmah Steam Navigation Company. This line, a six-weekly one, met with some opposition from the natives, who preferred running their own sailing crafts and doing business in the tardy oriental style. But their opposition slackened as the line was made a monthly one, and now that it is a weekly service all the important traffic is carried by steamers. Besides this line, which has the mail contract of the British Govern-

ment, there is another, started up in opposition by the Persian merchants, styled the Bombay and Persia Steam Navigation Company, but flying the English flag and plying with more or less regularity. Bushire, too, is connected with England by direct steam communication, conducted by several companies and private charters. Apart from these a good deal of cargo is carried from Europe to the gulf ports via Bombay and Kurrachee. About the commencement of steam communication the annual extent of tonnage entering this port was scarcely over 12,000 tons, whereas now it exceeds 200,000; but it must not for a moment be supposed that Bushire or any other of the Persian ports furnishes all the cargo for this quantity of tonnage, as Busreh is the port which supplies the largest portion of cargo, and without the help of Busreh the Persian Gulf trade would undoubtedly fall off materially and become comparatively insignificant.

#### THE TOWN OF BUSHIRE.

The population of Bushire is estimated at between twelve and fifteen thousand, about 150 being Christians (Europeans and Armenians), 300 Jews, and the rest Mohammedans. In the villages immediately adjoining the town there are about 5,000 persons, and 50,000 in the several districts under the jurisdiction of Bushire.

The town of Bushire is exceptionally dirty, with very narrow streets and many houses in such a dilapidated condition as to render passage in their vicinity during the winter months extremely dangerous and unpleasant.

The climate of Bushire, on account of the entire absence of sanitary measures, has become very unhealthy of late, fever, though not of a dangerous type, being prevalent throughout the year. From October till May the weather is cool and more or less agreeable, but the heat during the summer months is almost unbearable. The highest temperature noted in 1884 was 109° F., in the month of August; the lowest, 43°, in the month of January. In 1885 the highest temperature was 105°, in June, and the lowest, in January, being 41°. Amount of rainfall during the cultivation season in 1884 was 14.53 inches, while the total amount of rainfall during that year was 21.46 inches. That of 1885 was 23.58 inches.

#### AGRICULTURE.

Agriculture is much neglected, partly owing to the ignorance of the people and partly to their political condition; and as long as the present state of things continues Persia will be far from approaching the development of its comparatively vast resources. Modern implements of agriculture have not been at all introduced, and large tracts of land have not yet been brought under the plow. The soil is more or less fertile, and the crops under ordinary circumstances are quite satisfactory; but with favorable weather throughout the season the yield of wheat, for instance, in most of the districts of Bushire exceeds thirty and forty fold. The crops are entirely dependent on rain, and during the summer months great scarcity of water prevails.

#### IMPORTS AND EXPORTS.

Trade is gradually and materially increasing both in exports and imports. The articles of export are opium, cotton, raw silk, wheat, barley, carpets, gums, tobacco, wool, horses, drugs, dried fruits, dates, rosewater, shawls, &c., to the value of from £600,000 to nearly £1,000,000 annually, according to circumstances. The imports consist of copper in sheets and bottoms, cotton piece-goods, grays and bleached (as

per accompanying list), chintzes and prints, Turkey-red twills, twists and yarns, porcelain and earthenware, glassware, hardware, gold thread and gold cloths, woolen cloths, candles, beer, wines and spirits, clocks and watches, iron, tin plates, &c., from England; refined loaf-sugar from Marseilles; raw sugar from Mauritius, via Bombay; tea and tin from China and Java; coffee, drugs, spices, petroleum, indigo, gold brocades, cashmere shawls, and various sundries from British India, aggregating to the value of £1,000,000 to £1,200,000.

Formerly sugar was almost entirely brought from Java, and subsequently from Mauritius via Bombay. But now France supplies the wants of Southern Persia to the exclusion of Java sorts and the comparative diminution of imports from Mauritius. This has been the result of the struggle between the beet and cane sugar.

#### TRADE WITH THE UNITED STATES.

There is no direct commerce with the United States just now; and since my appointment I have not had occasion to authenticate invoices. I may, however, mention that some few years ago shipments of opium and carpets had taken place hence, but I believe Persian produce, such as opium, carpets, wool (dates from Busreh), is being regularly shipped from England to America. I am also informed that Persian opium finds its way to San Francisco from Hong-Kong. From America Bushire receives petroleum bought at Bombay, and a very small quantity of "Old Judge" tobacco. As long as the American people remain indifferent to the starting up of a direct trade with Persia I may confidently say that the initiative will not be taken from this side. I would therefore urge upon the enterprise of the American merchants to devise some means of opening up a trade. It is true that, owing to the distance and the absence of certain facilities, America could not from the onset enjoy equal advantages as certain European countries with which Persia now is in direct commercial relations, yet I do not see why its trade with Persia should form an exception to the success which American enterprise has achieved in its competition with other countries similarly situated.

I incline to believe American cotton manufactures, suitable for the Persian market, could be advantageously introduced, and I invite the attention of American merchants to this. By way of a commencement, small selling samples would suffice. Perhaps it would not be out of place to state that the American bark, the *Storm King*, Capt. Charles Millett, came here from Boston, about August, 1860, and disposed of a quantity of American sheetings and shirtings, taking a return cargo of dates, &c. There is already a regular trade carried on between America and Muscat, and shipments of dates are made direct from Busreh via London. To have show-rooms of American manufactures, &c., would, in my opinion, prove advantageous, and I would use every exertion in the furtherance of the object in view, and I shall be glad to defray personally the local expenses.

#### PERSIAN COTTON.

Persia was not a cotton-exporting country prior to the American civil war, but the moment the wants of that staple began to be felt in England, Persia, with wonderful rapidity, awoke from its lethargy and produced and exported cotton in large quantities. I may safely say that the present marked improvement in the condition of the Persian peasantry dates immediately from that civil war, although the subsequent culture of the poppy, too, has vastly added to their welfare.

The cultivation of cotton in the environs of Bushire is somewhat peculiar as compared with the system existing in the interior where the plants are annuals and grown by irrigation, whereas it is grown here without any irrigation and the plant lives up to twenty-five and thirty years without diminishing in yield. A plot of ground is plowed up several, at least three, times, during the rainy season, with the object of rendering the soil as soft as possible; then, just after the *last* rains, seeds, first cleaned from every vestige of the cotton, are soaked in water (in casks or vessels) for two or three days and then sown in furrows of about 8 to 10 inches deep in rows of 5 or 7 feet apart. The seeds are thickly sown (about 40 or 50 seeds going to the span) and covered over with earth. They begin to show up in one week or a fortnight. The young plants are entirely left to the mercy of the elements; the only precaution taken is to prevent their being destroyed by cattle. With a heavy fall of rain after the sowing, as a rule, the seeds die or come up very sparsely, and fresh seeds have to be put down immediately. If the soil is rich and soft the plants grow thickly, forming a sort of a hedge, but generally only two or three plants survive in a space of one yard. The plants, if in good soil, begin to bear in the first year, otherwise in the following, and continue increasing in yield up to their fifth or sixth year, when they may be said to have arrived at development. During the successive rainy seasons the intervening space between the rows is carefully plowed up and grain sown, with double advantage, the plowing being considered highly beneficial to the cotton, and its dead leaves in turn serving as manure for the grain. Cattle are allowed to enter the cotton fields in the end of autumn, they doing the work of pruning. A healthy plant will give cotton to the value of 8d., but the average yield may be taken at 1s. for every six plants. The plants blossom first in May and the cotton is collected in July, when they blossom immediately a second time, ripening in September.

#### CULTIVATION OF THE VINE.

The rearing of the vine, too, is peculiar in Bushire. On a declivity a well of 4 feet in diameter is dug to a depth of 16 feet, and a space of 5 feet is filled in with fresh soil well manured; then a healthy layer of the vine is put down early in March. For the first month it is watered four times, and gradually less frequently, about twice a month, till the autumn. The reason of planting the vine in wells and in slopes is to prevent the scorching heat of the sun striking at roots and to permit of rain-water to collect therein during the winter months, which is the only means of watering the plant. The vine begins to bear from the first year, but the bunches are plucked off for the first three years. The plant attains its maturity in six years, when its yield varies, according to the soil and attention it receives, from 130 to 700 pounds and more. The vine in the interior is grown partly by artificial irrigation and partly by rain only, the yield varying from 20 to 80 pounds, and, *very rarely*, about 200 pounds.

No official statistics are kept, and with much trouble, difficulty, and expense returns of imports and exports are collected. I shall, however, in my next report send complete statements of imports and exports of this port.

T. G. MALCOLM,  
*Consular Agent.*

UNITED STATES CONSULAR AGENCY,  
*Bushire, Persia, August 7, 1886.*

*Description of cotton manufactures imported into Persia from Manchester.*

Kind.	Pounds.	Yards.	Inches.
T-cloths (Mexicans).....	14	48	32
Gray shirtings.....	8½	39	39
Do.....	10	39	39
Do.....	10	39	54
Do.....	11	39	56
Do.....	9	39	45

White shirtings of various qualities; white jaconets; white mulls; Turkey red twills; Turkey cambrics; yarvs, mule and water; chintzes of superior make and designs, &c.

**MINING IN ALSACE-LORRAINE AND THE PRODUCTION OF STEEL.***REPORT OF CONSUL BALLOW, OF KEHL.*

Alsace, properly speaking, is not rich in metals, but in the districts of Lorraine bordering upon Rhenish Prussia are found iron ore, copper, nickel, and to some extent, zinc and tin. Iron is found in many localities in Lorraine, such as Hayange, Puttelangen, St. Wendel. The iron ore is mostly magnetic, and contains 65 per cent. metallic iron. The working of these mines began eight hundred years ago, and they are still far from being exhausted.

The general output per year is about 8,000 tons wrought iron, 6,000 tons cast iron, and 6,000 tons steel.

The coal employed amounted to 12,000 tons, which comes principally from Saarbrücken. There are in operation in Lorraine 48 furnaces, 210 puddling and soldering ovens, and 86 steam hammers. Two-thirds only of the iron ore worked in Alsace-Lorraine is the product of the country; the remainder is imported from Westphalia, Rhenish Prussia, and Belgium. In the southern part of Lorraine the iron ore is mostly found in red mangiferous hematite. A ton of this mineral costs about \$2.

Besides the department of Lorraine, Upper Alsace produces some iron ore, the production of that section aggregating about 1,800 tons per year. Although Lower Alsace does not produce any iron ore, it has the largest metallurgic establishment, that of Dietrich & Co., at Niederbroun, near Wörth, employing over 5,000 hands. They have 6 furnaces, 48 puddling and soldering ovens, and 45 stamp works. The iron ore worked in this establishment comes from Belgium, England, Prussia, and only a small amount from Alsace-Lorraine, the canal system of Alsace offering favorable transportation facilities.

This district takes an important, though not a leading, position in the steel trade of Germany.

The production was increased to 8,500 tons for last year. In the steel-rail trade Lorraine takes quite a prominent place, there being 30 converters at work at present.

**MANUFACTURING CAST STEEL FOR SHIP-PLATES.**

From the iron-ore mines are selected the purest ores, and those which are known by tests and experience to be most suitable for crucible steel. In blast-furnaces, especially constructed for the purpose, these ores are converted into pig-iron of a peculiar chemical composition. By the puddling process this iron is changed into steel and wrought iron, con-

taining a fixed quantity of carbon. The puddled steel is then rolled into bars of three-fourths of an inch square, and these, after being tempered, are broken into small pieces from two to four inches in length. The wrought iron is rolled into bars one and one-fourth inch long, and one-third of an inch in thickness. By competent men each of these small pieces is carefully examined as to its proportions of carbon, and when the examination and the selection of the proper pieces is completed, this constitutes the material destined for the crucible. In order to obtain from it a product containing a fixed percentage of carbon the proportions of wrought iron and steel destined for the crucibles are carefully selected. These quantities are then carefully weighed, and each crucible receives about 50 kilograms of these materials.

The crucibles are made by an improved process from materials particularly adapted to the purpose. They must be strong enough to endure the pressure of the contents in cold and in heat of almost 2,000 degrees, and so solid and clean as not to impart any foreign substance to the steel which is melted in them. Upon the proper construction of these crucibles largely depends the success of the castings. After being filled and hermetically closed the crucibles are subjected to a preliminary warming, and are then put into melting furnaces especially constructed to receive them. The castings are oblong in form, and the various parts of the plates are then formed by forging, which has the double purpose of greatly improving the metal, and, of course, giving it shape. Great care is necessary in performing this work. Previously to forging the great ingot it must be subjected very slowly to a certain and precise degree of heat, which shall be exactly equal throughout the entire mass. The forging process requires machinery of vast size and great strength, on account of the immense weight of the pieces which are to be handled, some of which weigh more than 20 tons. Immense steam hammers are in use to work them.

#### OTHER METALS.

*Copper* is found in a few places in Lorraine. Two hundred years ago there were large quantities of it, but, at present, these mines are almost exhausted. There is only one locality, Puttelangen, in Lorraine, where copper is profitably worked. The ore which contains the copper is composed of magnesian limestone and chlorated schist, and is frequently mixed with dorite and serpentine. The copper extracted from the ore is not worked in the country, but most of it goes to France, where it finds a ready market.

*Zinc, nickel, cobalt, antimony* are found in small quantities in Upper Alsace. They are disseminated in the rocks of the Jura Mountains; also a little lead, which is argentiferous. There is one bed of antimony in the province of Alsace-Lorraine, in Upper Alsace near Ferette, composed of pure antimony and sulphur with oxidated parts at the surface. This bed is worked profitably by a French company.

*Graphite* has been discovered in Upper Alsace; also red ocher. The beds vary in thickness from 3 to 18 feet, and are generally of easy access. In many cases the ocher contains some oxide of manganese and retains its dark color, and for that reason it is much sought after by the trade. The working of the beds is very simple, consisting of washing and drying, and, when necessary, the calcination of the natural ocher.

The only ore of phosphate of lime existing in this province is the crystallized variety, called apatite or fluorophosphate of lime. This ore is found in great abundance in Southern Lorraine, and is of superior quality, containing 85 per cent. of phosphate of lime and 12 per cent. of fluor-



ide of calcium. The products of these mines are sent principally to England, where they are used in manufacturing the various kinds of artificial fertilizers.

No coal beds of the slightest importance exist in Alsace-Lorraine, although Lorraine is contiguous to a country so rich in coal mines as Rhenish Prussia.

#### METAL INDUSTRIES OF ALSACE-LORRAINE.

In regard to the industries engaged in working the products of the mines of Lorraine, the Société Industrielle de Metz publishes the following facts:

During the year just closed (1884) the smelting and melting works met with less success than in former years. The prices for their products, which, at the beginning of the year, were already low, became lower from month to month until they forced a limited production, which has been postponed as long as possible. Iron mining was not satisfactory. The incessant shrinkage of value has caused a condition of things which has brought work in a large number of mines to a standstill. The depression in the iron trade has continued unchanged, and with such a state of affairs prevailing nearly everywhere it was certainly a satisfaction to Germany, and to Alsace-Lorraine in particular, that her iron industry suffered less than that of other countries. Although the iron works, with few exceptions, had to struggle with great difficulty, there was in no case any general discharge of operatives.

Technically as well as financially, well conducted steel works and many kinds of iron foundries and machine works met with satisfactory results, but the production of raw iron, manufacture of wire, and making of ship-iron, bar-iron, &c., were rather unprofitable.

The course of business on the Upper Rhine was especially unsatisfactory. The furnaces there found themselves unable to compete in the production of puddle iron with those of Rhenish Prussia and Westphalia; the consequence was that several furnaces for puddling were closed up and were afterwards used for the manufacture of foundry iron. Bar-iron met with a rather active demand, but had a decline in bottom price from 118 to 111 marks, and thereby reached an unprofitable point. Cast iron had a better market than any other article. Copper fell about 20 cents in price. For copper the year was bad. A recovery of the market is not to be thought of as long as the present overproduction continues.

The zinc market was very analogous to that of copper. The production was approximately that of the foregoing year, and the market somewhat dull; there was a decline in the average price of about 1 mark.

The following wages were paid in the steel works (crucible) of Lorraine, per week:

Occupation.	Wages.	Occupation.	Wages.
	<i>Marks.</i>		<i>Marks.</i>
Melters .....	25 to 40	Cellar-lads .....	5 to 15
Teemers .....	28 to 30	Forgers .....	30
Pullers-out .....	21 to 25	Strikers .....	25
Cokers .....	30 to 32	Hardeners .....	28
Pot-makers .....	28 to 30		

FRANK W. BALLOW,  
*Consul.*

UNITED STATES CONSULATE,  
*Kehl, May 20, 1886.*

**THE HARTFORD COPPER MINE OF CANADA.***REPORT OF CONSUL TUOKE, OF SHERBROOKE.***DESCRIPTION OF THE MINE.**

The Hartford mine, lot No. 3, in the ninth range of Ascot, 200 acres of land, was first discovered in 1865, and although the ores are known to be rich in sulphur, they have been chiefly treated for their copper contents alone.

The Hartford mine is situated on the top of a hill which rises to a considerable height, say 600 feet, above the Massawippi River, on whose western bank the Passumpsic Railroad is laid. The adjacent mines are, the Crown mine, owned by the Orford Copper and Sulphur Company, and the Albert mine, the property of Messrs. G. H. Nichols & Co. Both of these companies have their head offices in the city of New York. The veins found in the Hartford mine also pass through the Crown and Albert mines, the workings in each mine being on the same principal vein, which passes diagonally across the Hartford mine. As a consequence the boundary line of the Crown mine on the southwest (the direction in which the vein runs) cuts off at varying and great depths the length of the vein in the Hartford mine, as also the boundary line of the Albert mine affects it on the northeast.

The general direction in which the veins run is northeast and southwest. The length to which the vein in the Hartford mine has been traced is about 2,500 to 3,000 feet, and, including the distance proved in the Crown and Albert mines, the total ascertained length is probably some 5,000 feet.

The vein varies very much in character, for while in some places it is found to consist of alternate layers of slates and ores of varying thicknesses (the slates being the matrix of the vein), in other places the ores are found in compact bodies of large size. From this cause the vein (if it be understood that the matrix be included with the ores in giving the width thereof) varies very little, and is on an average from 30 to 40 feet wide; but if by the term vein only the notable ore bearing part be understood, then this part varies from 1 foot to 30 feet in width, the portion selected for working being from 2 feet and upwards in width.

The buildings on the mine consist of workmen's cottages, storehouses, offices, shaft and engine houses, blacksmiths' and carpenters' shops, houses for the miners to change their clothes in, and houses for dressing the ores.

The southwestern part, or No. 5 shaft, of the mine is unwatered to a depth of 500 feet on the inclination of the vein by the adit or tunnel of the Crown mine. At No. 4 shaft, or northeastern part of the mine, the water is pumped out.

The distance of the mine from the Capelton station of the Passumpsic Railroad is about 1 mile, and from the city of Sherbrooke about 8 miles.

No. 5 shaft of the Hartford mine strikes the boundary line of the Crown mine at a depth of 500 feet on the inclination of the vein. Under this the Crown mine proprietors have sunk 750 feet, making the total depth sunk on the vein 1,250 feet. No. 1 shaft is about 250 feet deep, and approaches the boundary of the Albert mine.

## MANNER OF WORKING.

There are no difficulties in working the mine other than those connected with the general mining of metal-bearing veins of great width, the roof standing well and requiring little timbering, occasional pillars being left as supports. The vein is, however, subjected to the influence of dikes and slides, the thickest dike being about 11 feet. The effect of the dike at the intersection of the vein is to throw the vein down, the displacement being about 4 to 6 feet. The method of working the mine has been to sink the shafts and extend levels on the vein for the convenience of handling the ores and then stoping out such portions of the vein as may be considered advisable or profitable. The doing of this work has been largely by contract.

There are no rents or royalties.

There is a double line of tramway in No. 5 shaft, and the ores are drawn to the surface in tram-wagons containing from 2,000 to 2,500 pounds of ores by wire ropes attached to a drum of 5 feet diameter, driven by a steam-engine of 20 horse-power.

At No. 1 shaft the ores are hoisted in buckets attached by wire ropes to a horse whim, the diameter of the drum of the whim being 9 feet, and horse-arm or lever being 16 feet.

Coals cost \$6 per ton delivered at shaft; cordwood costs \$2.50 per cord delivered at shaft also.

## WAGES AND SUBSISTENCE.

*Wages.*

Boys from 10 to 12 years of age, per day .....	\$0 30 to \$0 40
Boys from 12 to 16 .....	40 to 75
Laborers .....	1 00 to 1 10
Dressers .....	1 25 to 1 50

Hours of labor, 10 hours per day.

*Subsistence of laborers.*

Meat .....	per pound..	\$0 06
Butter .....	do..	17
Bread .....	6-pound loaf..	16
Fruit, apples .....	per barrel..	2 50
Sugar .....	per pound..	05½
Fish, salt .....	do..	03½
Eggs .....	per dozen..	17
Potatoes .....	per bushel..	40
Tea .....	per pound..	30
Liquors .....		
Clothing .....	per suit..	\$14 to \$20

*Shelter.*—Frame and log houses rent from \$1.50 to \$4 per month.

## UNIT OF COST.

From October 1, 1883, to March 31, 1884, there were 7,786 tons of rough ores above 1 inch square in size, exclusive of finer ores raised. The cost per ton was as follows:

Stoping (taking out ores):	Per ton.
Miners' wages .....	\$1 17
Other wages .....	1 06½
Supplies, powder, steel, &c .....	48
	<hr/> \$2 73½

## Development (opening the mine):

Miners' wages.....	\$0 15
Other wages.....	14
Supplies (as above).....	6 <sup>1</sup> / <sub>2</sub>
	<u>\$0 35<sup>1</sup>/<sub>2</sub></u>

Total cost per ton\*..... 3 09

## The details of the above are as follows:

	Per ton.
Office.....	\$02 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Underground :	
Foreman .....	04 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Development .....	15 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Stoping.....	1 16 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Hoisting.....	20 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Timbering.....	05 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Tramming.....	42 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Surface :	
Ore dressing .....	28 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Laborers.....	05 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Watchman .....	02 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Smiths.....	05 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Carpenters.....	03 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Teamwork.....	01 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Expense on roads, laborer.....	00 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Merchants' and other supply bills.....	54 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
	<u>\$3 09<sup>1</sup>/<sub>2</sub><sup>1</sup>/<sub>2</sub></u>

Or

Labor .....	\$2 54 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>
Supplies.....	54 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>

3 09<sup>1</sup>/<sub>2</sub><sup>1</sup>/<sub>2</sub>

The ores contain 35 to 42 per cent. sulphur, 3 to 4 per cent. copper, and 27 to 30 per cent. iron, and are sent to the company's smelting works at Capelton to be converted into a matte or regulus of from 20 to 25 per cent. copper.

## TAXES AND DUTIES.

The local taxes on the \$1 of valuation are—

	mms.
Municipal .....	4
School.....	3 <sup>1</sup> / <sub>2</sub>
Roads.....	8
Railroad.....	6

The import duties are: On iron, 17<sup>1</sup>/<sub>2</sub> per cent.; steel, \$3 per ton and 10 per cent.; machinery, 25 per cent.

*Domestic supplies at Sherbrooke, the nearest market, 8 miles from shaft.*

Powder, per keg of 25 pounds .....	\$3 00
Wire rope, per pound .....	10
Fuse, per 1,000 feet.....	7 75
Tallow, per pound .....	8
Coals, per gross ton .....	4 50
Candles, per pound .....	10
Oils, per gallon.....	30 to 60

The matte or regulus of copper made at the smelting works went by rail to Boston, Portland, or Quebec, thence by steamer to Liverpool,

\*One ton of ores weighs 2,352 pounds, and the calculations are on this basis.

England, or Swansea in Wales, at an average cost for freight, transport, selling, commission, &c., of about \$13 per ton (2352 pounds) of regulus.

#### SMELTING WORKS.

The smelting works to which the ores from the Hartford and other mines belonging to the Canadian Copper and Sulphur Company have been brought for treatment are situated at Capelton, at a short distance from the station of that name on the Passumpsic Railroad.

The main buildings consist of a breaker house, 30 by 50 feet, where the ores are broken to a size suitable for roasting in the ovens by a "Blakes" breaker of 15-inch jaw, driven by an engine of 10 horse-power; two burning houses; each house has two ranges of ovens, each range—83 feet by 10 feet 6 inches—contains 40 ovens; total, 160 ovens; a coke shed 20 by 40 feet; a coal shed 40 by 40 feet; a roasted ore shed, size 20 by 40 feet; a smelting house 60 by 88 feet, containing 5 cupola furnaces; engine room 20 by 48 feet; boiler room 16 by 24 feet; smith shop 16 by 21 feet; engine, 60 horse-power; boiler 15 by 46 feet; office, store-houses, boarding house, employés' cottages, stable, &c.

In dressing the ores at the mines they are assorted into two sizes, No. 1 size being from  $\frac{3}{4}$  to 3 inches square; No. 2 from 3 inches square and upwards to a size convenient for loading into wagons.

#### METHODS.

The ores requiring roasting, after being weighed, are delivered (No. 1 requiring no further breaking) to the burning-house, No. 2 to the breaker-house. After the ores are delivered to the burning-house they are placed in the oven or kiln for roasting, and the sulphur driven off, to prepare them for smelting. No use has been made of the sulphur fumes thus driven away. As soon as the ores are thoroughly roasted they are drawn from the ovens or kilns and conveyed to the smelting works in wagons over an inclined railway and delivered at the roasted-ore sheds, from whence they are filled into the cupolas as required. After passing through the smelting cupola the product separates into a slag containing four-tenths to six-tenths of 1 per cent. copper and a regulus or matte of from 23 to 25 per cent. copper. The slag is removed to the waste dumps and the regulus is taken to the barreling-house where it is broken up by hammers, put into barrels, and shipped to market.

No royalties nor patents.

One steam-engine, 10 horse-power, attached to ore-breaker. One Blake's ore-breaker, 15-inch jaw. One steam-engine, 60 horse-power, attached to blast. Sturtevant's blower, No. 8, for blast.

Coal, per gross ton, delivered.....	\$6 00
Cordwood, per cord, delivered.....	2 50
Coke, per ton gross, delivered.....	8 00

#### WAGES AND SUBSISTENCE.

Hours of labor, 10 per day.

##### *Wages.*

Laborers .....	per day..	\$1 00 to \$1 10
Trammers .....	do....	1 20 to 1 25
Burner men .....	do....	1 35
Pot haulers (smelters' assistants).....	do....	1 10
Smelters .....	do....	1 45
Carpenters .....	do....	1 75
Masons .....	do....	2 00

Subsistence, same as miners.

## UNIT OF COST.

*Cost per ton (of 2,352 pounds ore) for smelting 6,586 tons ore.*

Labor cost.....	\$183,497 1/2
Supplies.....	299,688 1/2
	<hr/> 483,186 1/2

Supplies include coke, coal, cordwood, lumber, oil, shovels, steel, fire-brick, &c. For details of labor cost see below :

*Details of cost of labor.*

Department.	Class of labor.	Cost per ton per class.	Cost per ton per department.
Superintendence.....	Office and time keeper .....		\$0 05 1/2
Breaker .....	Engine driver.....	\$0 00 1/2	
	Feeders .....	1 1/2	
	Trammers .....	2 1/2	2 1/2
Burners .....	Burner men .....	25 1/2	
	Wheelers .....	6 1/2	
	Trammers .....	11 1/2	
	Laborers .....	4 1/2	48 1/2
Smelting .....	Engine drivers.....	5 1/2	
	Smelters .....	18 1/2	
	Feeders .....	12 1/2	
	Wheelers .....	6 1/2	
	Pot haulers .....	8 1/2	
	Mason .....	2 1/2	
	Laborers .....	8 1/2	56 1/2
Expenses on regulus.....	Breakers and barrelling .....	6 1/2	
	Carriage .....	1 1/2	
	Sampling and weighing.....	1 1/2	7 1/2
Expenses on ores .....	Carriage .....	30 1/2	
	Sampling and weighing.....	2 1/2	32 1/2
Team work.....	Hauling from station.....		11 1/2
Watchman .....	Watching .....		3 1/2
Repairs and erections .....	Engineer .....	1 1/2	
	Carpenters .....	4 1/2	
	Smith .....	5 1/2	
	Mason .....	3 1/2	
	Laborers .....	2 1/2	11 1/2
Expenses on roads.....	Team work .....	1 1/2	
	Laborers .....	1 1/2	2 1/2
Laboratory .....	Assaying .....		2 1/2
Expenses on fences .....	Carriage .....	1 1/2	
	Laborers .....	1 1/2	1 1/2
Total .....			1 83 1/2
Merchants' bills for supplies of all kinds.....			2 90 1/2
Total cost per ton ores .....			4 83 1/2

The product is a regulus or matte of 23 or 25 per cent. copper.

The product is sent to England chiefly by rail to shipping port, thence by steamer.

Railway and ocean freight, wharfage, dockage, sale, commission, &c., cost about \$13 per ton of regulus of 25 per cent. copper, or say 52 cents per unit of copper.

The greatest item of cost is that of coke, the extra freight on which amounts to nearly 40 cents per ton of ores for handling and land carriage, besides the original cost of the coke in Montreal delivered at station.

GUSTAVUS TUOKE,  
Consul.

UNITED STATES CONSULATE,  
Sherbrooke, December 8, 1885.

## SILVER MINES OF CERRO DE PASCO, PERU.

## REPORT OF CONSUL BRENT, OF CALLAO.

The celebrated mining district of the Cerro de Pasco, which from the time of its discovery has produced such immense amounts of silver, is situated north of the great plain of Bombom, and about two leagues from that extensive sheet of water known as Lake Chinchay-cocha or Junin. The Cerro is in the interandean region. It lies at a point where the two ranges of the Cordillera, the eastern and western, which traverse Peru from north to south, meet, and from what is known as the Junction of Pasco (*el nudo de Pasco*).

The city of the Cerro de Pasco is built almost in the center of the mining district. Its geographical position is in latitude  $10^{\circ} 43'$  south, and longitude  $76^{\circ} 15' 51''$  west of Greenwich. It is at a height of 4,334 meters above the level of the sea, and 156 miles from Lima.

The city presents a remarkable appearance. In all of the streets and even in the principal squares are the mine openings, and the great heaps of earth extracted from the shafts. It seems as if some destructive earthquake had visited the place and effaced the original aspect of the town. The scenes presented on every side are most interesting. Below you appears an immense excavation in the yellow earth, which to the unpracticed eye gives no evidence of the wealth it contains, and men are busy packing it in sacks to be carried off by mules and donkeys to the neighboring places where it is treated. Houses are built on the sides of these excavations, on a foundation that threatens to give way at any moment; the chimneys vomit forth an intensely thick and black smoke, and the inhabitants, muffled up to their mouths in every season of the year, painfully inhale the air, so rarefied, of that great altitude.

Although there is scarcely any vegetation in the district, the streets are thronged with itinerant sellers of fruits, the palta or alligator pear, the chirimoya, bananas, and oranges, grown in the tropical regions of Huanuco, but a few leagues distant.

The city is honeycombed with mines; in many houses you may hear the picks of the laborers who are working far below, and examples are given of the disappearance of dwellings and their inmates in the sudden collapse of the frail foundation. There are large stoves in all the houses; the intense cold renders fires necessary nearly the whole year. Coal obtained in the vicinity is the combustible employed.

The markets of the Cerro de Pasco are excellently supplied from the further interior, and the bread made in the town is particularly good.

The climate is very trying. From July to September, the coldest in the year, the centigrade thermometer ranges during the day at  $10^{\circ}$  to  $11^{\circ}$  above zero, and at night at from  $10^{\circ}$  to  $12^{\circ}$  below. From December to March, a season which the people of the Cerro term their winter, whereas in reality it is their summer, the temperature during the day is from  $12^{\circ}$  to  $13^{\circ}$  above zero, and at night it falls to near zero, but the water seldom freezes. During this season the sun appears at times, and from the purity of the atmosphere the heat caused by its rays is almost unbearable. A person may be standing partly in the sunlight and a portion of his body may be in the shade; that portion is disagreeably cold, whilst the part exposed to the sun is uncomfortably warm. It would be difficult to find another locality where the atmospheric changes are more distinctly marked. Within twelve hours occur the

fierce heat of the sun, rain, hail, and snow storms, and the clear heavens again. Yet the climate is considered healthy. Vegetation, on account of the low temperature, is scanty, and only appears in a light grass that grows some 2 inches from the ground. Barley is cultivated for forage, but it bears no grain.

#### DISCOVERY OF SILVER AND HISTORY OF MINES.

The existence of silver at Cerro de Pasco was discovered by chance in the year 1630. An Indian, tending his sheep, was the individual destined to bring to light the source of such vast amounts of silver as were afterwards extracted from these deposits. One night, while this shepherd was resting with his flocks at Santa Rosa, near the Yauricocha Hill, he built a fire, as well to protect himself from the severe cold as to prepare his modest supper. Next morning he saw with astonishment that the stones on which his fagots had burned were melted and showed thin lines of silver. He hastened to the town of the Cerro de Pasco, 2 leagues distant, and communicated the fact of his discovery to Don Juan Ugarte, a Spanish merchant of the place. Ugarte lost no time in taking possession of the mine, after the manner of a squatter, and naming it after Santa Rosa, of Lima, set to working it, deriving therefrom a very large fortune.

On the news of this discovery reaching Lima, a great tide of emigration set out for the new mines; among the progressive miners who caught the contagion was Don Martin Retuerto, who settled upon Yauricocha as his place of labor, and here he opened the first adit leading into the side of the great hill. This mine was actively worked up to the year 1740, over a century, and then the descendants of Retuerto sold it to the family of Don José Maiz. There seemed to be a fatality in this. No sooner had the mine changed owners than it was flooded, and the new possessors were obliged to toil incessantly for twenty years before the ore was again reached. Immense amounts of silver were being taken from the district, but as greater depths were made the inundations occurred with more frequency, and stoppages ensued. A guild of miners had been formed, and in 1780, in order to protect themselves from these formidable floodings, the immense adit called Saint Judas was commenced, which was finished in 1800 at a cost of \$100,000. But soon the shafts were sunk to the level of the adit or drainage-tunnel, and it was necessary to construct another at a greater depth. That of Quiulacocha was commenced in 1806.

Meantime Don Pedro Abadie, an intelligent and enterprising miner, conceived the idea of draining the submerged shafts by employing steam power, and in 1815, in company with José Arismendi and Francisco Uville, entered upon a contract with the guild of miners to bring the pumping machinery from England. This was done after overcoming the greatest difficulty in transporting the machines from the coast to the interior, and in July, 1816, the pumping-engines, designed from those then in use in Cornwall, were placed in position and commenced work in a satisfactory manner. In order to render the transportation of this machinery possible over the narrow paths of the Cordillera, where all burdens are carried by pack mules and llamas, it all had to be constructed in pieces, no one of which should weigh over 150 pounds.

Up to this time the silver produced by the mines was obtained from the oxidized ore; but so soon as the pumping-engines were employed and the shafts sunken to a much greater depth ore of a highly superior character was found in which were virgin silver, rosicler, and sulphates



of silver. Everything progressed favorably until 1828, when the pumping apparatus was paralyzed by the explosion of the boilers; the drained mines were again inundated, the machinery disappeared under the waters, and of a necessity work was stopped in the greater number of the mines.

At this time a new mining company had been organized at Lima, the "Pasco Peruana," and had procured four pumping engines for the mines. This apparatus was brought up to the mountain and located at Yanacancha and Santa Rosa. This machinery was not sufficiently powerful; the mines were only drained to a depth of 15 yards, yet the enterprise proved to be one of profit until misunderstandings arose between the company and the mining guild; lawsuits followed, and injunctions were served. The work was stopped, to the manifest disadvantage of all concerned, save the legal advisers interested in the contention.

The mining guild then determined on including the drainage tunnel for the Quiulacocha shaft, receiving a monthly subsidy from the Government of \$2,000, and imposing a duty of 10 cents on every mark (8 ounces) of ore extracted. This tax was afterwards raised to 15 cents. But the work that was accomplished was insufficient. New attempts at drainage were being constantly made to little or no effect.

The decadence of the Cerro de Pasco mines dates from 1828, when the original pumping apparatus was destroyed and the shafts inundated. The mines are still filled with water, and the incalculable wealth contained in their veins and pockets is awaiting the advent of energy and intelligence for its liberation. Up to 1828, from the time of the discovery of silver on a considerable scale at the Cerro de Pasco, it is estimated by careful computers that \$400,000,000 of the precious metal were extracted from these deposits.

#### NEEDS OF THE MINES.

In order to properly drain the submerged shafts the most powerful machinery known for such work must be employed. Apparatus of such a character cannot be taken over the Andes on mule-back. It cannot be reduced to pieces of the necessary size and weight for such transportation. Hence the late Mr. Henry Meiggs cut the knot of the problem when he proposed to the Government to prolong the Oroya Railway to the Cerro de Pasco, 135 miles from the present inland terminus, at Chida. By this means the question of transportation is answered. And going still further, he also expressed his readiness to construct a gigantic drainage-tunnel or adit, of a size commensurate with the projected work, and to establish at the Cerro the most improved mills for crushing and refining ore, in place of the primitive methods still in use in that section for extracting the precious metal from the argentiferous earth. These proposals were accepted by the Government, and work was inaugurated on the tunnel. The war with Chili and internal dissensions caused a stoppage of all progress. Now the Meiggs contract has been assumed by a syndicate formed in London and New York, and represented by Mr. Michael P. Grace, of the last-named city.

Assays of the Cero de Pasco ores give from 7,000 marcos to 2 marcos of pure silver per cajon of 60 centals of ore. The "marco," as has been stated, is 8 ounces.

#### OCCURRENCE OF MINERALS.

The metallic minerals of the Cerro de Pasco may be divided into three groups—of silver, of copper, and of lead. By an extraordinary disposition of nature, each of these different minerals appears to have selected

a separate abiding place. Thus, in the southern and central portions of the district the silver mines are most common, in the northern section of Yanacancha copper principally is found, and in that to the north-east are situated the great lead deposits.

The abundance of sulphurets of iron, or pyrites, called "*bronce*" by the miners, is remarkable at the Cerro de Pasco. This mineral is found at a moderate depth, but at a varying distance from the surface in different mines—in some below the water-level, in others above it.

The silver ores of the Cerro de Pasco are native silver, commonly called virgin silver, lingot silver, or solid silver, as the case may be; the *argirosa*, or sulphuret of silver, vulgarly termed "*plomorongo*," and an earthy sulphuret of silver called "*polvorizza*"; many varieties of pyrites of silver-bearing metal; different classes of hydrate oxide of silver, or brown hematite (limonite) of varied colors, yellow, red, brown, and even black when it contains manganese, to which classes is commonly given the name of "*paco*," and which are produced by the oxidation of the pyrites; and, lastly, some silicate and silver-bearing ores known as "*cascajo*." This "*cascajo*" is considered to be a sandstone containing traces of iron, and it is rich in silver. It is one of the most beautiful examples of metamorphosis to be found in the geological formation of Peru, and in it has been found the shell of an oyster, at this same district of Cerro de Pasco, 4,300 meters above the level of the sea. Although poor in the amount of metal held, the "*cascajo*," from its abundance, is more generally worked at present than any other of the ores of the Cerro de Pasco.

The principal copper mines are of native copper; the protoxide of copper, called "*rosecler*" by the miners; the antimonial sulphate, named "*pavonado*"; malachite of carbonate of copper; azurita, or blue carbonates.

In the lead mines is found galena, or sulphuret of lead, containing more or less silver.

The assays of some of these ores are as follows:

SILVER.		
		Fine.
Sulphurets of silver, from the mine " <i>Nieves</i> "	.....	0.72
Sulphurets of silver, from the mine " <i>San Tadeo</i> "	.....	0.57
Pyrites, from the mine " <i>Peña Blanca</i> "	.....	0.25
Hydrate oxide of iron, from the mine " <i>Candelaria</i> "	.....	0.02

COPPER.		
		Per cent.
Native copper ( <i>cobre nativo</i> )	.....	60
Malachite and	.....	2 to 38

H. M. BRENT,  
Consul.

UNITED STATES CONSULATE,  
Callao, January 14, 1886.

#### PERU'S NEW RAILWAYS.

[Lima (August 22) letter to the Panama Star and Herald.]

The important railway project referred to in my last communication for the construction of a road from Lima to Pisco, and thence to the interior city of Ayacucho has been followed by others of much interest to the public. A proposal is before the Government to construct a narrow-gauge line from Tarma into the fertile valley of the Chanchamayo, where there is already large capital employed in the cultivation

of sugar, cotton, coffee, &c. Another refers to the rebuilding of the important railway connecting the port of Ilo in the south with the city of Moquegua, traversing the noted wine-growing districts of that department, and Don Juan L. Thomdyke, the lessee of the Mollendo, Arequipa and Puno Railways, proposes to the executive to carry out those lines to Marangani, toward Cuzco, and around the shore of the Lake Titicaca to the Peruvian boundary with Bolivia on the Desaguadero. And in addition to these projected undertakings we have the prospect in the near future of the completion of the famous Oroya Railway to the Cerro de Pasco, and the thorough development of the famous silver mines at that place. The commission of mining experts sent out from New York has arrived at the Cerro de Pasco, and within a month or six weeks will probably conclude their labors, which consist of a careful examination of the ores extracted from the deepest of the shafts now submerged. Intelligent mechanics have also arrived from California to superintend the erection of the 20-stamp mill at the Cerro de Pasco, which was brought here by the Oroya Company from California several years ago. The various propositions referred to are now under consideration of the executive, and have so far been favorably reported upon by the different Government officers through which they have passed. In no instance is the state called upon to disburse money. The concession of monopoly is asked for a certain term of years, at the expiration of which the works become national property. One of these roads alone, that from Lima to Ayacucho, would involve an expenditure of 30,000,000 silver soles, of which at least half would be disbursed here, and the other projects also promise benefits of a like nature. The fact of such important propositions being made, and the readiness to employ capital of such magnitude, go to prove that confidence is reposed in the stability of order in Peru, and in the vast wealth she holds awaiting development.

## WOOL EXPORTS AND WOOL PROSPECTS OF THE ARGENTINE REPUBLIC.

REPORT OF CONSUL BAKER, OF BUENOS AYRES.

The wool season of 1885-'86, which is just now closing in the Argentine Republic, already exhibits a large deficit on the returns of the previous year. The following figures, which have been made up by one of the leading wool brokers of this market, show the exports from the port of Buenos Ayres from October 1 to July 15 of each season, respectively:

*Export of wool from Buenos Ayres.*

Destination.	1884-'85.	1885-'86.
	<i>Bales.</i>	<i>Bales.</i>
Havre.....	30,307	19,019
Bordeaux.....	2,572	2,448
Marseilles.....	154	248
Cette.....	11	64
Dunkerque.....	119,292	126,388
France.....	162,336	148,167
Belgium.....	81,862	75,866
Germany.....	57,321	42,833
United States.....	4,636	1,464
England.....	8,833	6,468
Italy.....	5,555	8,590
Other places.....	1,004	798
Total.....	315,147	284,196

The total clip of 1884-'85 amounted to 318,860 bales, all of which, except 3,713 bales, had gone forward by the 15th of July, whilst the shipments of 1885-'86 up to the 15th of July reach only to 284,186. If we make an allowance of 5,000 bales as the balance of the latter clip which remains to be shipped—a figure which is regarded as rather over the amount—it will be seen that the total clip shows a deficit of about 30,000

bales. The deficit in reality, however, is much larger than this, as every year heretofore there has been an average balance of 20,000 bales carried from one clip to the next, while this season there is no stock whatever on hand; so that the actual deficit is upwards of 50,000 bales, equal to upwards of 30,000,000 pounds.

In regard to the approaching wool clip (1886-'87) the prospect is still more unpromising. It is thought that there will be fully 75,000 bales less than the figures of 1884-'85. The reasons for this opinion are based on the fact that the winter, which is just now closing in the province of Buenos Ayres, the principal seat of the pastoral industry in the Argentine Republic, has been the severest on the cattle and sheep which has occurred in many years. The rains of the first part of the season, causing floods over an unusually large portion of the province, and the heavy frosts and freezing which have occurred since, have made terrible havoc among the flocks and herds. The losses from these causes are not confined to one locality, but are general. The number of animals which have died in consequence of the severity of the weather are estimated by the *Anales Rurales*, a paper devoted to the grazing interests, to be as follows:\*

Animals.	Number dead.	Value.
Mares and horned cattle .....	500,000	\$2,600,000
Sheep and lambs .....	12,600,000	15,000,000
Damage to wool (say 10 per cent.) .....		1,125,000
Total loss .....		18,725,000
Deduct hides and sheep skins .....		827,000
Actual loss .....		17,898,000

The last census put the number of sheep in this province at 69,000,000; and as the usual net increase is about 20 per cent. per annum, making allowance for the animals killed for food, it will be seen that the increase in the flocks this year will be reduced by the last winter's losses to an almost nominal figure.

But the floods and the frosts are not the only troubles which the sheep farmers are just now contending against. Whilst these have been doing the work of destruction, a very singular and fatal disease is now also devastating the flocks. The nature of the malady is not understood, but it seems to be the result of worms in the throat and lungs,

\* The following is what the *Anales Rurales* says on the subject:

"Floods are now much more frequent than twenty years ago, and the losses are vastly greater. This is partly a result of increase of population and the subdivision of property, houses and fences occurring where formerly it was level pampa. Happily few lives are lost in these floods, the people having time to get out of their reach; but the destruction of cattle and crops is immense. The area subject to floods is about 25,000 square miles, with 3,000,000 cows and 25,000,000 sheep, in round numbers. Fully one-half of this area is under water during four or five months of the year, and the remainder is consequently overstocked, the sheep and cattle being driven there from the flooded portions. Cows and mares suffer not so much if they can find dry ground to sleep on; they often eat aquatic plants in those places where the water does not exceed 12 or 18 inches. But if the floods be of long duration the poor cattle get so thin that they are unable to stand the first cold of winter, and succumb in thousands. Even when they do not die they are often unable to give any increase. If we take it that 10 per cent. of the increase is lost, this is equivalent to \$2,000,000, besides which about 3 per cent. die or are drowned, making a loss altogether of \$2,600,000 in horned cattle and mares. Far greater, however, are the losses in sheep; we have lost this year in the flooded camps alone a little over 10,000,000 lambs and about 2,500,000 sheep, representing a value of \$15,060,000. Moreover, the value of the wool is damaged at least 10 per cent."

and it is said to be fatal to every animal it attacks. Some flocks, which safely escaped the floods, have been more than decimated by this singular disease, and its ravages are still going on.

Besides this, the foot-rot on nearly all the inside "camps" is unusually prevalent, in some cases whole flocks being scarcely able to walk. And the scab, which is now spreading all over the country,\* and which, in the absence of any scab law, attacks even the best cared-for flocks, assists, with the other causes I have mentioned, to make the sheep and wool interests of the Argentine Republic in a decidedly unsatisfactory condition.

For the reasons here given the deficit in the approaching wool clip of the Argentine Republic, it is predicted, will be upwards of 75,000 bales, or about 45,000,000 pounds.

E. L. BAKER,  
Consul.

UNITED STATES CONSULATE,  
Buenos Ayres, August 4, 1886.

### NEW SPANISH CONSULAR TARIFF.

In transmitting the following translation of the new consular tariff of Spain, Mr. Edward H. Strobel calls attention to the fact that it suppresses the consular tonnage tax which has so long been a cause of complaint on the part of the United States.

#### INTRODUCTION.

MADAM: A consular tariff, more than any other branch of mercantile legislation, is subject to the natural modification caused by the currents of trade and the usages of other nations.

The decree of April 23, 1867, treated of an organization of the tariff in accordance with principles of equity and fixed rules of general application; but this measure was so far from satisfying the exigencies of commerce that a short time afterwards a commission of officials of the consular corps undertook the preparation of a reformed tariff which finally appeared on the 15th of July, 1874, and with the additions made by the royal order of October 18, 1876, is the legislation now in force. This was not sufficient in view of the transformation in the mercantile relations of nations, consequent upon the rapidity of communication and the development of steam navigation. The Government, therefore, attentive to the claims of some foreign Governments and of the national commerce, on March 27, 1884, appointed a commission composed of public officials of the ministries of finance and state to examine the question anew and to attempt, on the one hand, to lighten the burdens weighing upon commerce, and to decrease the fetters which prevent its development, and, on the other, to maintain the income of the treasury in a proportion compatible with these aims.

The commission discharged its duty with so great zeal and activity that two months after it presented its report to the ministry of state with a complete tariff, in which important reforms were contained.

The undersigned minister, at his entrance upon the duties of the department of state, when this work had already been completed, thought it would perhaps be ad-

\* The Buenos Ayres Standard on this subject says:

"*Scab in sheep.*—Some influential *estancieros* are at present endeavoring to induce the Rural Society to urge Governor Damico to pass an edict for the suppression of scab. They have requested us at the same time to lend any moral weight we possess for the same purpose. It is needless to explain to the authorities of the province of Buenos Ayres that the matter is one of the highest importance. According to Mr. Nicholas Lowe, *scab causes a loss of one-fourth of the wool clip*, and as the actual production (between what is exported and what is used in the country) does not fall short of 286,000,000 pounds, we find the loss is 95,000,000 pounds, *worth something over \$10,000,000 yearly*. Several experienced *estancieros* assure us that Mr. Lowe's estimate is correct."

vantageous to the public service to consult the consular corps in foreign countries in regard to the reforms which in his judgment should be made and the consequences of the reforms already made. This consultation has given important results in the replies of various consular agents abroad, and has shown that some foreign countries begin to apply to their consular tariffs a standard and principles differing from those which predominate in ours. From this fact the necessity is seen of studying anew these modifications, because, in the competition which to-day exists among all nations in foreign commerce, the burdens which will weigh upon some of them in an unequal manner might result to the disadvantage and perhaps the diminution of their mercantile resources.

But this work is assuredly not one of those that can be made in a day, and at the same time the complaints against the present tariff and the claims which I have referred to above are repeated with increased vigor.

Not only a foreign country, which has for some time protested against the form in which the tonnage tax is levied, but also Spanish shipowners in repeated petitions and complaints have recently appealed to the Government in terms which the undersigned minister does not believe it prudent to disregard.

On the other hand, the recent creation of chambers of commerce and the importance of their opinion and report in such matters make it expedient for us before dictating definite measures to listen to those who have *per se*, and in whom the law recognizes, especial capacity for these subjects.

Despite all this, the examination of the consular reports, the comparison of the tariffs of other countries, and the report of the chambers of commerce require a period of time which, to the undersigned minister, appears incompatible with the necessities and claims of commerce, and, as at the same time he finds before him a project which merits especial consideration from the manner in which it has been studied and from the character of the persons who have prepared it, he believes that he can satisfy these different and apparently contrary tendencies by proposing to your Majesty the immediate publication, but with a provisional character, of the tariff prepared by the commission created by the decree of March 27, 1884, and the preparation during the space of one year of the data and reports referred to for the three fundamental objects which, in the opinion of the undersigned, a consular tariff ought to combine, to wit: The removal of every fetter and burden unnecessary to commerce; income for the treasury, above all when consuls act as notaries; and harmony of this tariff with those established by other countries, especially in everything that concerns navigation, in order that foreign commerce may not be found to enjoy advantages over the national commerce or the latter be prejudiced by the administrative regulations of its own country.

With the new tariff, therefore, in force, and trusting to the experience of a year for the discovery of its deficiencies or excesses if it should have them, with the study in the mean time of the regulations and legal provisions of other countries, with the opinions of the chambers of commerce and a comparison of the reports of the consuls, the undersigned minister believes that at the completion of this period the Government will be found in a position to make a reform which will not only satisfy all interests and avoid all complaints, but will have the duration and stability which accompanies measures taken with complete knowledge of causes.

For the above reasons the undersigned minister, in accordance with the minister of finance and the council of ministers, has the honor to propose, for the approval of your Majesty, the following project of decree. Madam, at your Majesty's royal feet.

SEGISMUNDO MORET.

MADRID, June 25, 1886.

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[Translation.]

#### ROYAL DECREE.

On the proposal of the minister of state, and according with the council of ministers, in the name of my august son, King D. Alfonso XIII, as Queen Regent of the Kingdom, I decree as follows:

ARTICLE 1. The consular tariff adjoined to this decree shall take effect and provisionally control from the 1st of August next.

ART. 2. In the period of a year, which shall begin with the publication of this decree, the department of commerce of the ministry of state shall collect the following material:

(1) Opinions of the consuls-general, who shall hear the views of their subordinates in their districts in regard to the advantages or disadvantages of this tariff.

(2) Judgment of the chambers of commerce on the same.

(3) A tabular comparison of the consular tariffs of the five greatest maritime powers of Europe and all those of America; and

(4) Quarterly income produced by the consular tariff during the last five years and the current tariff.

Given at the Palace, the 25th day of June, 1886.

MARIA CRISTINA.

The Minister of State,  
SEGISMUNDO MORET.

*Report of the commission to his excellency the minister of state.*

**EXCELLENCY:** The commission appointed by royal decree of the 27th of last March, for the revision of the existing consular tariff, has the honor to present to your excellency the following project of reform, formulating the result of their deliberations and their final decision, which is happily in accord with the opinion of each of the individual members.

The commission has attempted to conduct its labors in the same spirit of foresight which dictated the preamble of the royal decree. The evolution which is taking place in the existing methods of our commerce, from circumstances that are beneficial to its prosperity and development, has necessarily outstripped consular legislation. It was necessary to harmonize the expansive currents of commercial relations and treaties which represent permanent and principal interests with the no less important, if more transitory, requirements of a needy treasury. In this sense the reform had to embrace the greatest reduction of the burden on commerce and the least injury to the income of the state—extremes which are truly, from an economic point of view, directly opposed and difficult to harmonize, and which invariably present themselves in the changes in the economy of nations. Hence the commission has not been able to avoid in the project a diminution of the sources of income contained in the present consular tariff, and has suppressed fees which are censured at home and abroad on account of the burden upon trade, even with foreign countries, and which benumb in addition our industrial commerce. The commission has also reduced the fees that weigh excessively upon our merchant marine, in the belief that such suppressions or reductions are in short an advance which will be refunded to the state by the proper support of the maritime commerce.

The payment of the tonnage tax on cargo, established for all flags by the royal order, which in the existing tariff was substituted for articles 48 to 51, is therefore suppressed, as well as the payment of the tonnage tax on measurement for the national flag fixed by article 1. Other fees imposed on navigation have been diminished, though in a less degree, in accordance with what is required by the unity of standard in the reform or the possible agreement of our tariff with that of foreign countries.

Fortunately, the other sections have afforded the commission the means of compensating in part for the immediate reductions indicated without injury to any class of interests or persons; rather by endowing consular acts with a spirit of equality and justice, which is the best assurance of their protecting mission. The result obtained by merely assimilating the condition of all Spanish subjects or interests by extending to its consulates the notarial, judicial, and administrative tariffs existing in Spain, is that the rates of fees in the project appear higher than those of the present tariff; that the text of 87 articles, to which the present 175 have been reduced, is more concise and clear; that its exposition is methodical, and that the tariff is, therefore, easy to study, to consult, and to apply.

If the establishment of the tariff could be accompanied by a system of supervision which would cause the regulations governing accounts to be generally and perfectly observed in the consulates and consular agencies, the commission believes that it will be adequate to the present necessities and to those resulting from the changes in commercial relations, beside compensating the national income for the loss which circumstances enforce, if not fully, at least within the greatest degree to which it is possible to aspire.

In this manner the commission has discharged the duty which it received from the Government of Her Majesty, using all the diligence which was recommended by the royal order which constituted it and by your excellency, as far as compatible with the complete examination and decision of the subject, which it to-day submits to the approbation of your excellency.

The VISCOUNT OF CAMPO GRANDE,  
*President.*

JACOBO PRENDERGAST.  
ISIDORO MILLAS.  
RAFAEL ATARD.  
BALBINO CORTÉS Y MORALES.  
ANTONIO VAZQUEZ, *Secretary.*

MADRID, May 27, 1884.

*Consular tariff, or tariff of fees to be collected in the consulates of Spain.*

Services or class of documents.			
		In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.  In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
Services relative to navigation and to commerce.		Pesetas.	Pesetas.
ART. 1.			
For certifying ships' papers, whether engaged in commerce or not:			
If the vessel is less than 100 tons .....		2	2
From 100 up to 500 .....		5	7.50
From 501 up to 1,000 .....		10	15
From 1,000 and upwards .....		20	30
ART. 2.			
Spanish fishing vessels pursuing their occupation in foreign coasts will pay no duties for certifying ships' papers, but shall pay on the yearly renewal of the same:			
If below 50 tons .....		10	15
If above 50 tons .....		15	25
ART. 3.			
For provisional shipping papers—in case of loss of original document—duly explained, and in view of deed of affidavit sworn and signed by the captain, which must be added to the document given as a substitute .....		10	15
ART. 4.			
For authorizing a new log or any other book or register of a vessel and affixing seal and rubric on all its leaves .....		10	15
ART. 5.			
For addition to register, each leaf .....		2	3
For addition to log, each leaf .....		1	2
ART. 6.			
For a provisional passport,* including crew .....		20	30
ART. 7.			
For extending navigation passport as required by law .....		10	15
ART. 8.			
For each permit for measurement of vessel, entrance or clearance from port for chartering or discharging, for repairs, &c., and for every demand for bill of health, or for any other documents in ports where they are required .....		1	2
ART. 9.			
For every entry in the crew's list for shipping or discharge of seamen, or for the increase or decrease in the number of the crew .....		2	3
ART. 10.			
For the appointment or substitution of a captain .....		10	15
For the appointment or substitution of a pilot .....		5	7.50
For the appointment or substitution of a coxswain .....		2	3

\* Pasavante=Safeguard to vessel in time of war.



*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.	In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.		In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
<i>Services relative to navigation and to commerce—Continued.</i>	<i>Pesetas.</i>	<i>Pesetas.</i>		
<b>ART. 11.</b>				
For authorizing all sorts of commercial or maritime contracts made in simple policies or instruments between parties, certifying only to the authenticity of the signatures of the contracting parties.....	5	7.50		
<b>ART. 12.</b>				
For the visa in private contracts between charterers and captains, or between either of these and the crew for the purpose of defining the share, salary, provisioning, and other conditions of shipment and enrollment.....	3	5		
<b>ART. 13.</b>				
For every record of examination or revision of pending accounts between charterers and captains, or between either of these and the crew of a vessel at the expiration of a contract; the distribution of what belongs to each individual when, if it should be necessary, the experts named by the parties, with the consul's intervention, have been heard.....	10	15		
For every leaf of the statement of settlement or of copies thereof.....	2	3		
<b>ART. 14.</b>				
For entry in any of the registers of a vessel of protests made by the captain at his arrival, including certified copy thereof.....	5	7.50		
<b>ART. 15.</b>				
For every statement drawn up at the request of captains of vessels or of an interested party in regard to arrival from stress of weather, average, shipwreck, sequestration, or embargo of vessel or its merchandise, visits and examinations on board, or any act or service relating to navigation or commerce:	10	15		
For the first sheet.....	3	5		
For every additional leaf.....				
<b>ART. 16.</b>				
The papers certifying the nationality of a vessel, renunciation of flag, change of name or shape of a vessel, as well as those drawn up to prove that a vessel was built abroad, by the order, with the capital, and for the use of a Spanish shipowner, shall pay, besides the especial fees for legal instruments, visa, certifying, or other acts necessary:	20	30		
For the first sheet.....	5	7.50		
For each additional leaf.....				
<b>ART. 17.</b>				
For official documents relating to accidents on sea or shipwreck and those belonging to the discharge of a consul's duties—in visiting national vessels, and in the investigation, repression, or punishment of disorders, occurring on board, during the cruise or while in port—no fees will be exacted.				
<b>ART. 18.</b>				
For every leaf of the record or decision for the settlement and adjustment of an arbitrated case, settlement of accounts and liquidation of damages or shipwrecks, or anything else relating to navigation and commerce, comprising the proportional distribution among the contributors of the amount after payment of liabilities, when in necessary cases experts are heard and the consul has been named or agreed upon by the parties as arbitrator.....	5	7.50		
For the first sheet of the judgment or arbitrator's decision.....	10	15		
For every subsequent leaf.....	5	7.50		

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.		In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea. In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
<i>Services relative to navigation and commerce—Continued.</i>		<i>Pesetas.</i>	<i>Pesetas.</i>
<b>ART. 19.</b>			
For the different measures to be taken in the course of a maritime or commercial transaction, no fee will be collected except when there is required a decision upon a disputed question, but for every appointment and sworn declaration of an expert there shall be collected .....		3	5
<b>ART. 20.</b>			
For every leaf of a copy of the papers relating to every kind of maritime or commercial transaction there shall be paid:			
If not on file .....		1	2
If on file .....		2	3
<b>ART. 31.</b>			
For every hour spent by the consul or his representative out of the consulate for the purpose of attending to the saving of a vessel, and drawing up the proper statement of the facts, besides expenses of travelling and lodging, there shall be paid:			
If the vessel is less than 100 tons .....		2	3
If the vessel is larger .....		5	7.50
<b>ART. 22.</b>			
For the deposit of merchandise or effects saved from a ship, made by the consul officially or at the petition of the party interested, besides expenses for storage and ballment, there shall be paid on the value of the effects.....per 100..		50	.....
<b>ART. 23.</b>			
For consular intervention in the sale at auction of the whole or part of a vessel, effects saved, merchandise .....		50	
When the effects so sold proceed from shipwreck .....		25	
<b>ART. 24.</b>			
For certifying the manifest which Spanish or foreign vessels must present at the national custom-houses, when said document is required, there shall be paid:			
When the vessel is less than 200 tons .....		5	10
When the vessel is more than 200 tons .....		10	20
If said manifest be written and prepared at the consulate double the above duties will be paid, the fee for the consular visa being then included.			
<b>ART. 25.</b>			
For return of certificate of entry and delivery .....		5	7.50
<b>ART. 26.</b>			
For the embarking or disembarking of every passenger .....		1	2
<b>ART. 27.</b>			
Certifying to a bill of health:			
If vessel is less than 200 tons .....		5	7.50
If greater .....		10	15
When bill of health is issued by consulate it will cost:			
For vessels less than 200 tons .....		6	12
If greater .....		12	18

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.	In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.		In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
<i>Services relative to navigation and commerce—Continued.</i>	<i>Pesetas.</i>	<i>Pesetas.</i>		
<b>ART. 28.</b>				
For every class of certificates or visa of documents or services referring to commerce not mentioned in this tariff .....	5	7.50		
<b>ART. 29.</b>				
For the performance by consuls of brokers' duties or interpreting, by virtue of treaties or of the practice of the country in which they reside, the vessels shall pay:				
If less than 200 tons .....	20	30		
If more than 200 tons .....	30	50		
<b>NOTARIAL.</b>				
<i>Commercial and maritime contracts.</i>				
<b>ART. 30.</b>				
For each public instrument and certified copies of contracts fixing the share, salary, or of the crew of a vessel, whether this be made between the captain and the charterer, or whether between either of these and all or each one of the seamen .....	10	15		
For each one of the second or successive copies .....	3	5		
<b>ART. 31.</b>				
For each original and first copies of contract of freight, if the amount or value concerned does not exceed 5,000 pesetas .....	10	15		
If it exceeds this sum, on what constitutes the excess .....	25			
For each second or third copies thereof .....	5	7.50		
<b>ART. 32.</b>				
For each original bottomry bond, and first copies thereof:				
If the loan does not exceed 5,000 pesetas .....	10	15		
If it does exceed that amount, on the excess .....	25			
For each one of the second and successive copies thereof .....	5	7.50		
<b>ART. 33.</b>				
For each original instrument and first copies of contracts of maritime insurance of any kind whatever .....	10	15		
For each of the second or successive copies thereof .....	5	7.50		
<b>ART. 34.</b>				
For each instrument and first copy of protest of arrival, average, or any other protest whatever .....	10	15		
For every subsequent copy thereof .....	5	7.50		
<b>ART. 35.</b>				
For each original or first copies of deed of barter, purchase, or sale of a vessel, or of any of its parts or rigging, on the value .....	50			
For each of the second or later copies .....	10	15		
<b>ART. 36.</b>				
The protest of a bill of exchange, notification, and answer .....	10	15		

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.

In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.

In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.

*Commercial and maritime contracts—Continued.*

*Pesetas.*

*Pesetas.*

ART. 37.

For each original and first copies of constitution, dissolution, adjustment, and liquidation of accounts of mercantile societies, for the first sheet	10	15
For each subsequent leaf	5	7.50
For each second or successive copies thereof	10	15

ART. 38.

For each original and first copies of any commercial or maritime contract not specified in the present tariff will be paid:		
If there be transfer of possession or repayment of money in a case involving the same	50	
The second and successive copies of such documents	10	15
If contracts refer to obligations merely personal in their character, or when no fixed amount or appraised object is to be considered	10	15
The second or necessary copies of these contracts will pay each	5	7.50

ART. 39.

For official documents drawn up for commercial or maritime contracts, entered into outside of the consulate, the payment will be:		
If the documents are made between the parties they will be considered as executed before the consul.		
If they are official instruments (drawn up before some official) or documents having the same effect according to Spanish law, for each leaf copied in the register	5	7.50

*Acts and contracts between individuals.*

ART. 40.

For the original and first copies of every act or contract in which there is no transfer or change of possession and which is not required to be recorded in the registry of deeds, or in those in which intervenes no payment of money or its equivalent in other values at the time the obligation is formed, viz, any kind of deposition, acts of agreement, orders, or special powers of attorney, either general or for law suits, wills or nuncupative codicils, mere personal obligations, each leaf of consular register	5	7.50
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ART. 41.

For each original and first copies of declaration of the amount that a husband contributes on marriage, of discharge in full, of lease or sublease, of security and pledge without mortgage of society or company, of arrangement and settlement of a donation or foundation, where, although there may be a modification in possession by virtue of value, there is no compulsory payment, every leaf in consul's register	5	7.50
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ART. 42.

For each original and first copies of contracts, paying off of annuities, reselling to original vendor, loans and security with mortgage, compulsory assignments for the benefit of creditors, settlement of dower, settlement by husband for benefit of wife, marriage settlement of allowance and donation <i>propter nuptias</i> , provided that they are required to be recorded in the Government registry of property:		
If the amount in question does not exceed 50,000 pesetas	per 100	0.35
From this sum to 250,000, besides the fee fixed above, the excess of the first or the second sum shall pay	per 100	0.5

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.	In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.		In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
	<i>Pesetas.</i>	<i>Pesetas.</i>		
<p align="center"><b>Acts and contracts between individuals—Continued.</b></p> <p>If the sum that is the subject of the contract should exceed 250,000, no other fees shall be paid than those fixed for this sum.</p> <p>The standard for regulating the amount to be charged in these contracts when the amount is not mentioned, will be, in the paying off of annuities and in assignments for the benefit of creditors, the capital which is used or redeemed, and, in all the rest the capital which they represent, deducting all but mortgage charges.</p>				
<b>ART. 43.</b>				
For each original instrument and first copies of contracts, sale, barter, settle-				
ment in payment of debts, annuities, and in all those in which there is actual				
delivery of cash or its equivalent in other values, whether immediate, admitted,				
or deferred:				
If the amount in question does not exceed 50,000 pesetas.....per 100.....			0.50	
From 50,000 up to 250,000 pesetas in addition to the above fee, the excess of				
the above sum or the second amount shall pay.....per 100.....			0.05	
If it should exceed 250,000 pesetas no other fees shall be paid than those fixed				
for this sum. That shall be considered as capital affected by these contracts,				
which, although it is not precisely money, results from value of the subject-mat-				
ter of contract, when all costs are deducted that are not merely hypothecary in sales				
and settlements in payment of debts; in annuities and mortgages the subject-				
matter of the contract and in barter the value of the property that is of the most				
value shall be consulted as capital.				
<b>ART. 44.</b>				
For drawing up sealed will.....			50	60
If the will is deposited in the consulate.....			70	80
<b>ART. 45.</b>				
Each leaf of second or subsequent copies of any deed or document with marginal				
note of reference.....			5	7.50
<b>ART. 46.</b>				
Entry in consular register of all kinds of documents, records, or judicial proceed-				
ings not especially referred to in this tariff, each leaf.....			5	7.50
<b>ART. 47.</b>				
Each leaf of the literal attestation of the whole or part of a document produced				
for this purpose, formalities, putting on or removing seals, opening a will, deli-				
very of property, money or effects in keeping or deposit, judicial or adminis-				
trative intervention, and any other act or document, the annotations, state-			5	7.50
ments, or copies thereof being included.....			7.50	10
If the attestation is to a report to a court, for each leaf.....				
<b>ART. 48.</b>				
For each hour spent in the attestation or preparation of any statement, docu-				
ment, or contract outside of the consulate, besides the expenses for travelling				
and lodging.....			5	7.50
<b>ART. 49.</b>				
For certifying to a signature.....			5	7.50

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.		In all the States of Europe and Asia bordering the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.  In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
Judicial acts.		Pesetas.	Pesetas.
ART. 50.			
For every act of compromise, oral decision when the value of the subject-matter of the suit does not exceed 1,500 pesetas, or trial of misdemeanor, for each hour. If the defendant being summoned should not appear, only half of the fees should be paid.		5	7.50
ART. 51.			
For every leaf containing judicial provisions in any kind of civil or criminal cases and matters relevant to them.		2	3
For each leaf in which the pleading used in same are entered.		3	5
For every leaf of decision.		5	7.50
ART. 52.			
For every order in every class of judgments.			
ART. 53.			
For the act of admitting securities in cases of every kind.		5	7.50
ART. 54.			
For each of the acts or proceedings at the different stages of a case, as notifications, summons, appointments, acceptance or renunciation, declarations of witnesses, opinions of experts, &c.		1	2
If these are attended to outside of the consulate.		3	5
ART. 55.			
For every leaf of report of any one acting as Government consul when he is to be heard in accordance with the law.		3	5
ART. 56.			
For issuing of request to judge of equal jurisdiction, greater jurisdiction, order of judge, mandates or writs:			
The first sheet.		5	7.50
For every subsequent leaf.		2	3
ART. 57.			
For every hour spent in the consulate in trials or judicial inquiries, auction sales, meeting of members of a family or of creditors, and in all cases where the judicial intervention of the consul is required or solicited.		3	5
If the consul's presence is necessary outside of his office, whether for the above-mentioned acts or for any other of a judicial character, each hour.		5	7.50
ART. 58.			
For all legal proceedings in the opening of a will or sealed codicil, save the fees for entering in consular register.		20	30
ART. 59.			
For every leaf of proceedings in decisions by agreement or necessary in the case of a will or intestacy, until the settlement of the inheritance, if its value or amount does not exceed 5,000 pesetas.		2	3
If it exceeds this amount.		5	7.50
For the operations of liquidation and apportionment of the value of the inheritance, assets that are fictitious or incapable of collection being deducted, per 100.		0.25	

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.	In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and oceans as far as the Gulf of Guinea.		In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
<i>Judicial acts—Continued.</i>		<i>Pesetas.</i>	<i>Pesetas.</i>	
<b>ART. 60.</b>				
For the record of the approval of the measures taken extrajudicially for carrying out the provisions of a will:				
For the examination of every leaf .....		1	2	
For the decree approving the measures taken for the decision, liquidation, and adjudication of an inheritance—the amount of the deduction of assets incapable of collection or fictitious. .... per 100 .....		0.25		
The entering in register of these records will pay the corresponding fees.				
<b>ART. 61.</b>				
For every leaf of judicial proceedings, or the record in matters of voluntary jurisdiction, judicial inquiries of every class, appointments, resignation, or cessation in the charges of guardian or overseer of a minor's estate, sale of property of minors, or of persons legally disqualified, provisional allowance for support, and other matters not subject of litigation .....		3	5	
For the report of proceedings for delivery to the interested parties, when it is required in accordance with the law .....		5	7.50	
For the entry of these records in register, no fees.				
<b>ART. 62.</b>				
For every leaf of the proceedings when the consul acts as an arbitrator, or friendly mediator, agreed upon by the parties .....		3	5	
For the examination of each leaf of documents produced in these cases .....		1	2	
In case of settlement of accounts or liquidation—on the sum..... per 100 .....		50		
For every leaf of judgment or decision of arbitrator .....		5	7.50	
<b>ART. 63.</b>				
For every certificate given at request of the party interested, and in virtue of the documents he presents to declare his ownership of foreign dividends of any kind whatsoever:				
For the examination of every leaf .....		2	3	
For the certificate .....		5	7.50	
<b>ART. 64.</b>				
For the judicial administration of all kinds of property or income which, according to law, is within the consul's jurisdiction, there shall be paid on the income, per 100 .....		5		
In cases where the consul names some one else to act as administrator, through inability to act personally in that capacity, the method of administration shall be governed by the usages of the particular locality.				
For issuing paper appointing an administrator .....		10	15	
<b>ART. 65.</b>				
Spaniards or those under protection of Spain who can prove their poverty have advantage of judicial proceedings gratuitously both in civil or criminal cases.				
<i>Acts administrative and within the consulate.</i>				
<b>ART. 66.</b>				
The entry in the registers of Spaniards or protégés of Spain residing abroad will be free of charge.				
For each certificate of identity (cédula) issued on making the entry, or for its annual renewal .....		5	7.50	

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.		In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.	In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.
<i>Acts administrative and within the consulates—Continued.</i>		<i>Pesetas.</i>	<i>Pesetas.</i>
<b>ART. 67.</b>			
For entry in the civil register of the consulates of reports of births, marriages, and deaths, no fees.			
But each certificate or copy of the above-mentioned reports will pay .....		5	7.50
<b>ART. 68.</b>			
The certificates referred to in the two preceding articles will pay, when issued to simple day-laborers or other workmen of small means, or to members of their families. ....		1	2
For poor men in genuine distresses, no fee.			
<b>ART. 69.</b>			
For the issue of a passport. ....		10	15
For the visa of a passport. ....		2	3
Protégés of Spain and Chinese on their way to the Philippines to engage in industrial or commercial pursuits, or under contract to work in the Spanish Antilles, will be subject to the same fees. Passports will be issued or visaed free of charge in the following cases:			
First, to employes or representatives of the Government or of any Spanish authority during the performance of their duties, and soldiers who are in active service, or who, while enjoying a leave of absence, are ordered to report for duty.			
Second, Spanish or foreign diplomatic or consular agents in all circumstances.			
Third, Moorish subjects only when on their way to Spain.			
Fourth, poor Spaniards and foreigners whose passport appears to have been issued free of charge for the same reason.			
Fifth, the visa of the Spanish passports so long as the bearer does not change the route marked therein.			
<b>ART. 70.</b>			
For every warrant of protection where this may be authorized .....		25	40
<b>ART. 71.</b>			
For a certificate of life residence or change of domicile. ....		5	7.50
If the certificate has for its object—and it is so expressed at the foot of the formal declarations—the collection of any credit or pension payable by the state, the corresponding fees will be as follows:			
If the pension does not exceed 100 pesetas, no fee.			
From 101 to 500 pesetas .....		1	1
From 501 to 1,000 pesetas .....		2	2
From 1,001 to 3,000 pesetas .....		3	3
From 3,000 and upwards .....		5	5
For the certificates of a monthly review of soldiers, sailors, or any official subject to this formality, no fees.			
<b>ART. 72.</b>			
For all classes of certificates relating to the civil status of persons or to administrative acts not mentioned in this tariff. ....		5	7.50
<b>ART. 73.</b>			
For every certificate of appointment as honorary vice-consul or consular agent issued by consuls to persons in their district. ....		100	150



*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

Services or class of documents.	In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.		In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.	
<i>Acts administrative and within the consulate—Continued.</i>	<i>Pescetas.</i>	<i>Pescetas.</i>		
<b>ART. 74.</b>				
Translation of any kind of document, each leaf:			From a foreign language into Spanish .....	5 7.50
From Spanish into a foreign language .....	10	15		
<b>ART. 75.</b>				
For every hour of attendance the dragomans or interpreters of the consulates, on summons of a party, of the courts or local authorities .....	5	7.50		
<b>ART. 76.</b>				
For the deposit and custody in the consular safe of valuables, money, or papers belonging to Spanish subjects, by way of voluntary deposit, including proceedings for delivery and return:			For every class of documents or papers .....	20 40
Valuables or money less than 500 pesetas .....	5	7.50	If the amount deposited exceeds 500 pesetas, each year .....	1
No fees will be charged: first, when valuables, money, and jewelry are from provisions of wills or in case of intestacy; second, security required from Spaniards for military service, when passports are given for places where, for the want of treaties, they can elude this obligation; third, securities of all kinds required for proceedings at law.				
<b>General dispositions.</b>				
<b>ART. 77.</b>				
Consuls, vice-consuls, and consular agents will see, under strictest responsibility, that in the offices under their charge no other or higher fees shall be collected than those herein prescribed, charging no fees in case of omission or doubt, and making an immediate report to the ministry.			For the exact fulfillment of this provision there shall be expressed in each document, even in those given free of charge, the number in the order of entry in the corresponding register, the article or articles of the tariff applied, and the amount of fees received.	
When there are several items for which any individual pays consular fees, or even when there is but one item, and a demand is made for it, the consular officers shall formulate itemized receipts, in which the articles of the tariff applied are stated, the fees therein prescribed, the partial amount collected for each item, the date of issue of document or service, the total sum collected, date of receipt, signature of collecting officer, and the consular seal.				
<b>ART. 78.</b>				
All consulates, vice-consulates, and consular agencies, without exception, shall have at the disposal of the treasury the share of the amount belonging thereto, in accordance with the law and existing regulations.				
<b>ART. 79.</b>				
The collection shall be made precisely in current coin, not liable to depreciation in the country and reduced to Spanish money, in accordance with the standards fixed in the adjoining table of values.				
<b>ART. 80.</b>				
One or several copies of this tariff, according to requirements, shall be exhibited in all the consular offices, it being the duty of the officer in charge to place them in full view where they can be consulted by all persons interested.				

*Consular tariff, or tariff of fees to be collected in the consulates of Spain—Continued.*

<p>Services or class of documents.</p>	<p>In all the States of Europe and Asia bordering on the Mediterranean and Black Sea, and of Africa bordering on the Mediterranean and ocean as far as the Gulf of Guinea.</p>	<p>In all the States of America and Oceania, and in those of Africa and Asia and in their coasts on the ocean.</p>
<p><i>General dispositions—Continued.</i></p> <p><b>ART. 81.</b></p> <p>The expenses of traveling, lodging, vehicles, or boats, necessary on account of distances or the requirements of the service, as well as advances made in course of consular business, shall be refunded to the consuls.</p> <p><b>ART. 82.</b></p> <p>For the services in which fees are to be fixed for sheets or leaves, the former are to be understood as composed of four pages and the latter two pages, each page to contain twenty-four lines of sixteen syllables. The sheet or leaf once begun must be paid in full.</p> <p>Likewise in service by hours, fractions shall be considered as whole hours.</p> <p><b>ART. 83.</b></p> <p>The amount of fees of interpreters or dragomen not specified in this tariff, as well as those of medical men, or experts, will be governed by the custom of each locality.</p> <p><b>ART. 84.</b></p> <p>For all official services, either by order of the Government, or by command or request of Spanish or foreign authorities, no fees.</p> <p>Likewise, for all services rendered to national war vessels, and ordinary services to Spanish yachts and foreign vessels of war, no fees.</p> <p><b>ART. 85.</b></p> <p>Spaniards giving proof of destitution shall obtain, free of charge, the services of a consul in cases not mentioned in this tariff.</p> <p><b>ART. 86.</b></p> <p>In case any foreign nation establishes in its consular tariff higher duties for Spaniards than for its own citizens, a differential duty shall be considered as established, applicable by way of reprisal to said foreigners, consisting of one-third more than the standards fixed in articles of this tariff.</p> <p><b>ART. 87.</b></p> <p>This tariff shall take effect immediately, and all provisions in opposition are null and void.</p>	<p><i>Peetas.</i></p>	<p><i>Peetas.</i></p>

## TARIFF OF COLOMBIA.

## REPORT OF CONSUL VIFQUAIN, OF BARRANQUILLA.

The system of customs taxation here is wholly specific, and the new tariff has fourteen different classes, varying from 1 cent to \$1.20 per kilogram (two pounds). In the main it is a more liberal tariff for importers than the one now in force.

I respectfully call your attention to the section of the new tariff which enables Peru, Ecuador, and Venezuela to enjoy reciprocity privileges with Colombia in all matters of trade. Also, that agricultural machinery, so very much needed in this country for the development of the very richest of agricultural resources, is taken at the rate of 2½ cents per kilogram. Yet, there are no manufactories of the kind in this land, and no land is in need of agricultural implements more than this, inasmuch as a crooked stick is often seen to take the place of a plow. I cannot but think that an argument before the commission that had charge of the tariff law, and well directed influence by the legations of nations that have so much at stake in the matter of agricultural machinery, like ours, for instance, might have had the effect of giving to this country the blessings of a low tariff for the implements that she is so much in need of.

Article 4 of the new law provides for an additional duty, not an "ad valorem," but an "ad per centum"; that is to say, \$1 worth of duties becomes \$1.25, as \$100 becomes \$125. The whole of this tax is for the national treasury, and the 25 per cent. additional has been put on to make up for the great expenditures of the last revolution. In addition to this there is another tax, but it goes into the treasuries of the respective States, and is collected by the respective local authorities. This tax amounts to 15 per cent. additional to the customs tax, and is to all intents and purposes an indirect tax on imports. If this State of Bolivia, for instance, one of the nine of this Republic, consumes imports answering to the value of \$100,000, the persons using these imports pay 15 per cent. on their respective consumption. This tax has for object the redemption of \$100,000 paper currency issued by the State.

My advices, as referred to above, as to the charges to be made prior to the 1st of October, are that the national 25 per cent. additional will be repealed. Whether the 15 per cent. is to be repealed I do not know, but as a new constitution is soon to go into effect, and this new constitution abolishes the State governments, and establishes in lieu thereof departments, it is likely that the new fundamental law in itself will make the 15 per cent. additional for State purposes extraconstitutional.

VICTOR VIFQUAIN,  
*Consul.*

UNITED STATES CONSULATE,  
*Barranquilla, August 24, 1886.*

**THE MINERAL DISTRICTS OF NICARAGUA.***REPORT OF CONSUL WILLS, OF MANAGUA.***NUEVA SEGOVIA.**

Hitherto the mining enterprise of this country has been expended chiefly in Ohontales and Matagalpa, but now efforts are being made to open up the resources of Segovia. There is a cart road from Leon, one branch of which goes to Sauce, and the other to Matagalpa; but from these towns the only communication with the interior of the country is by means of mule tracks, which are always difficult, and in the wet season often impassable. For this reason, and from the scarcity of manufactures in Nicaragua, the only minerals worth seeking are the ores of the precious metals.

The mountains of Segovia contain a great deal of auriferous quartz, usually in veins of segregation, although in places fissure veins are met with. They are seldom of great extent, and are always very irregularly distributed. It is reasonable to suppose that, by the natural processes of disintegration and transportation, alluvial deposits have been formed here as elsewhere; but, if this be so, they must have been worked out by the native races, who were perfectly acquainted with the use of gold, as modern prospecting has failed to bring any paying placers to light.

At La Palmitta, 3 leagues from Sauce, an English company is at work. They have erected a pneumatic stamp, equal to about 30 tons a day of their rock, and have opened a tunnel, and a number of pockets which have furnished rich specimens. They have not been running long enough to afford very definite results.

A mile from this place a native company is opening a vein which gives good showing of gold in the horn-spoon, and are building an ox-power arrastra (or Mexican mill). Both these companies depend on wells for their supply of water.

East of this is the Santa Rosa district, where several arrastras are at work, and where the erection of a 10-stamp mill is in contemplation. Here early Spanish workings can be seen; and it is stated that a few tons from the old ore piles were crushed lately, with an average yield of nearly an ounce.

North of this about three days' ride is the Telpaneca district, where many openings have been made, and gold has long been obtained by means of arrastras. This is a very slow and wasteful process, the native workmen putting their loss from one-third to one-half of the total yield. The presence of water in the levels has been an obstacle to the systematic opening of the mines, as native ingenuity and skill afford no means of keeping it under. Two companies have been formed here which own the best looking of the claims. Both are anxious to sell out to foreign parties. One of these companies is erecting a 10-stamp mill, which will probably get to work this year or next. This neighborhood seems to offer the best field for speculators, and agents of some of the Honduras companies have been prospecting here.

**MATAGALPA.**

At a distance of 3 leagues from Matagalpa there is paying quartz. The veins have been opened by tunnels to a considerable distance in

two places, and a good deal of ore has been removed. One drive is full of water, but the other is easily accessible. A clayey graphite is abundant on the wall rock. This place was worked by an American company with a 10-stamp mill, and some shipments of gold were made; but owing to internal disputes the place has fallen into neglect and the machinery is ruined.

#### CHONTALES.

The fullest account of the Chontales mines is in Bell's "Naturalist in Nicaragua." The best known of these mines have almost identical histories. The "*manta*" gave large yields; but when it was exhausted and work was begun on the veins, the yield fell away so rapidly that operations were either discontinued or carried on with a reduced establishment, and often at a loss. "*Manta*" is a Spanish word for what English writers are accustomed to call "*placers in situ*." By this term they describe a vein or series of veins which have been more or less broken down and pulverized by the action of the natural forces to which they were exposed, but which have escaped removal and further disintegration by rivers. The "*mantas*" are therefore found upon the sites of the veins whose ruins they are; and it is easy to understand that, under the action of rains, &c., the high specific gravity of gold would determine its concentration and accumulation in certain portions of the loose rock. Thus "*mantas*" have been known to give magnificent results, and great expectations were formed of the future of some of the mines, which unfortunately have not been realized. The best known are as those of Santo Domingo and Javali, the former of which, some years ago, employed more than 100 foreigners, who were often accompanied by their families. At present a much smaller number suffices. These mines are all well found in machinery and supplies, but appear to have been under persistent bad management.

Near Libertad is the Babylonia mine, at present considered the most prosperous concern in the country. The *manta* is being worked, and a large supply of good ore is said to be in sight. A pneumatic stamp of powerful design is used, one head doing more work than ten heads of cam stamps of equal weight.

At the eastern end of the Lake of Nicaragua, within easy reach of San Carlos, a third stamp of the same description has been erected by a resident of this country. His operations are too recent to allow their future to be predicted.

This is by no means an exhaustive account of mining in Nicaragua, but mention has been made of those enterprises which may most reasonably be expected to have a measure of success. Most of the vein-gold is not free-milling, but is associated with the sulphides of iron, arsenic, and antimony, and occasionally with tin and bismuth, although not in combination with the latter. No attempt has been made to introduce any chemical process of separation.

#### MINING LAWS.

The mining laws of Nicaragua are sufficiently liberal, and resemble those in force in most countries which desire to encourage mining enterprise. A handy edition of the code (in Spanish) is willingly supplied to applicants. I send to the Department of State a copy. A few points may be mentioned here.

All minerals are considered as belonging to the state, which concedes the right of working them to individuals without distinction of nation.

ality. This privilege is withheld, however, from ecclesiastics and from certain Government officials. Claims can be taken up on all lands, public or private, and include the use of wood, water, and right of way. No steps are necessary to secure the right of mining in an alluvial deposit, unless the machinery used cost over \$1,000.

A mineral claim is defined as a solid of rectangular base and indefinite depth, whose length is 200 Spanish varas, and whose width varies with the lay of the land.

Applications must be made to the authorities of the department, or, in case they reside at an unreasonable distance, to an inspector of mines. Within seventy days from the filing of the application a shaft or gallery must be opened of sufficient depth and breadth to show the form and direction of the deposit and the nature of the metal.

The expenses of measuring, &c., are borne by the applicant.

Great facilities are also offered by the Government to importers of mining machinery.

CHAS. H. WILLS,  
*Consul.*

UNITED STATES CONSULATE,  
*Managua, May 21, 1886.*

## NEEDS OF THE MEXICAN MARKETS.

REPORT OF VICE-CONSUL WINSLOW, OF GUERRERO.

As I receive continually circulars and letters asking for information from manufacturers of machinery and tools, I would state that there is no demand here for machinery of any sort. In agriculture a few small iron plows, it is true, are used, and I believe that they are coming into more general use. The plow used by Mexicans is made out of a crooked fork of a tree, shod on the end with iron. Their hoes are very wide, heavy, and clumsy. A light hoe would be useless where so many bushes and stumps are left after their mode of plowing.

No mowers, reapers, thrashing-machines, or harrows are used or needed, as corn is the only kind of grain planted here.

Corn is always shelled by hand on an *olotero*, which is made by tying together a number of corn-cobs in a circular form. I think I could dispose of a number of cheap corn-shellors at profit, and would invite any maker of them to send me one for trial.

As the bread generally eaten here is the tortilla, made by boiling corn in lime water, and then grinding it on a granite stone (*el metate*), by means of another long stone (*la mano*), a hand machine for reducing it to a pulp would be salable.

Carpenters', blacksmiths', and shoemakers' tools find a ready sale.

Washing-machines or wash-boards are not used. The washing is done by women, who squat down along the banks of the river with their dresses tucked up between their knees and scrub the clothes on flat stones, and afterwards hang them out to dry on the bushes.

There are no windmills here, although they would be particularly useful for pumping water out of the river for irrigating purposes, as the crops are generally lost from the drought; and if artesian wells were sunk they could be used for giving water to stock. In fact, neither agriculture nor stock-raising can be profitably carried on here without artesian wells and windmills. A few pumps could be sold here at

present, especially pumps for cisterns. It would pay some enterprising person to come to Mexico and put down artesian wells and erect wind-mills, especially on the plains which extend south of the Sierra Madre.

When I speak of machinery I only refer to this consular district; in the interior of Mexico considerable machinery is being introduced of all kinds.

There is no demand in this consular district for mining machinery and implements, as the only mines here are of coal, and they are not worked at present for want of transportation for the coal. The nearest silver mines are at Cerralvo and Vallecillo, in Nuevo Leon, 90 miles distant. No electric machinery would sell here at present.

CHARLES WINSLOW,  
Vice-Consul.

UNITED STATES CONSULATE,  
*Guerrero, September 5, 1886.*

## AMERICAN GOODS AT RETAIL IN GERMANY.

REPORT OF CONSUL GOODWIN, OF ANNABERG.

As an illustration of what degree of success it is possible for a man to achieve in dealing in American goods at retail in Germany, let me relate the experience of the proprietor of a general drug and fancy grocery store in Dresden. While passing along the Pragerstrasse in that city a few days ago, I observed a large sign, upon which was painted, in a style calculated to attract public attention, "Anglo-American Drug House—Fresh Importations every Week from London and New York." Curiosity led me to enter the store and inquire for the proprietor. The latter, in the person of Mr. George Baumann, soon appeared, and proved to be about the liveliest man I have yet seen among the natives of His Imperial Majesty's domain.

"Why," said I, after hearing the man speak, "you are a Yankee; I expected to see a German." "Well," was the quick reply, "I am something of a Yankee, for I have traveled pretty much over the United States, and have lived for short periods in New York and New England; but I am a German, and was born and raised here in Saxony." But to my story. Said I, "You advertise that you have American goods to sell; now, what have you?" "What have I? You mean what haven't I. Well, sir, look at this oatmeal, which I import myself directly from the Akron City Mills, in Akron, Ohio. Then here is the best American hominy, and there is Duryea's maizena. That line of whiskies on the upper shelves is the genuine Kentucky Bourbon, imported by me through Messrs. Thurber & Co., of New York. Then I have other whiskies, both rye and Bourbon, and they take better than Irish and Scotch whiskies, even though the latter has 'the smell of the smoke on it still.' Besides these things, I have always in stock arrowroot from Bermuda, bought in New York; genuine St. Thomas bay-rum; every decent patent medicine you ever heard of, including vegetine, cuticura, Cheeseborough's vaseline, rock-and-rye, Alcock's and Seabury's and Johnson's plasters, caprine plasters, sozodont, extract of witch hazel, Hagan's magnolia balm, St. Jacob's oil, Brown's bronchial troches, pennyroyal, coccatina, hoarhound drops, and any quantity of others. I have also what cannot be found anywhere else in Saxony, and in but very few places in all Germany, and that is genuine American molasses. I sell it in 1-quart

and 2-quart bottles. Here is a bottle of it; just smell it; taste it if you like; no doubt about it, is there? That is the very best article of New Orleans molasses; I import it direct. Then I keep American celery salt, Glen Mills toilet papers, corn-starch, American cooking extracts of all kinds, farina, Brown & Bolton's corn-flour, Jamaica ginger, Pond's extract." And so the man's tongue rattled on, as he named scores of other articles of American production and manufacture that, despite the high duties imposed by the German Government, he was enabled to find a sale for.

"How many years have you been established here?" I asked. "I opened this store in 1866, and my business has increased gradually ever since. At first I handled only German and English goods, but as I had calls now and then for American goods I began about five years ago to try my luck at handling them also; every little while I take hold of something new, and in nearly every instance I have worked up a paying trade; small sales and small profits in many cases, but altogether a fair paying business, which is now well established, and increasing in volume faster than at any former period. The demand for American goods is increasing faster than that for English goods, although the English colony resident here is much larger than the American. I have English customers who buy my Ohio oatmeal and prefer it to the Scotch."

#### AMOUNT OF SALES.

Said I, "Mr. Baumann, can you give me some idea of your sales of American goods?" "Yes; take hominy, for example; only a few years ago I introduced it here and sold the first year only a few dozen pounds; last year I sold ten barrels. Of Duryea's maizena I sold 360 pounds; rye and Bourbon whisky, 500 quarts. Two years ago I made my first importation of rock-and-rye, and last year I sold 300 bottles of it. The sale of American plasters is increasing rapidly, and it is almost the universal and unquestioned belief that they are the best in the market. Molasses and maple sirup I have handled so short a time that I cannot say how successful I may be with them, but the outlook is good for a large sale. The demand for patent medicines is increasing. I began selling vaseline five years ago; it went hard the first year, but last year, without any special push, I sold 430 bottles, or eight times as much as I sold four years ago."

"You have to charge pretty high prices for your American goods, on account of the high German duties?" I suggested. "Well, the duties are a great hindrance to a lively trade, no doubt. Fifteen years ago there was no duty of any account; now, on liquors, for example, I have to pay about 100 marks, or \$23.80, for every 100 kilograms of liquor imported; and as a single quart bottle filled will weigh nearly 2 pounds, the duty on each is from 30 to 33½ cents. Still, I put a fair price, above the cost, duty included, upon every American article, and I find customers, or rather customers find me, for I assure you I have not made any great effort in the advertising line, and my American goods are selling on their merits. I have advertised only in our local papers, but you would be surprised to know how widely my little enterprise has become known. I have orders from Americans in all parts of the Continent, and not only from them, but from our own people and from the English. I have had orders from Berlin, from the American minister among others, and I have sent goods to quite a number of American consuls, who in turn have been the means of bringing me many other orders. I notice one thing that is very creditable to Americans residing in Eu-



rope, and that is that they prefer to buy their own home-made articles, and in many instances they will pay cheerfully a considerable extra cost rather than have the English or German goods.

#### PRICES.

Said I, "Can you give me a list of your prices for the American articles which you are handling?" "I can give you something of an idea from memory," said Mr. Baumann. "The Ohio oatmeal meets with a ready sale at  $7\frac{1}{2}$  cents per pound; the Scotch oatmeal, I may say, by way of contrast, sells for about 12 cents. Brown & Bolton's corn-flour, 19 cents per pound; Indian meal, Thurber's best, 21 cents per pound; New Orleans molasses, 90 cents per gallon; rye whisky, \$1.30, Bourbon whisky, \$1.37 per quart bottle (Scotch whisky, 89 cents); hominy,  $8\frac{1}{2}$  cents; celery salt,  $37\frac{1}{2}$  cents per bottle; corn-starch,  $7\frac{1}{2}$  cents per package; fly-paper, 42 cents per package; Duryea's maizena, 15 cents per pound-package; Jamaica rum,  $37\frac{1}{2}$  and 71 cents per bottle; vaseline, 24 cents per bottle; Jamaica ginger, small regular-size bottle,  $18\frac{1}{2}$  cents; hop bitters, \$1.30 per bottle; 'Peerless Gloss' shoe polish, 18 cents per bottle; St. Jacob's oil, small-size bottle, 47 cents; Brown's bronchial troches, 28 cents per box; capcine plasters, 24 cents; sozodont, 70 cents; extract of witch-hazel, 35 cents per bottle, and so on. Of such of these articles, and many more, I endeavor to have a stock always on hand. I have fresh importations from New York every week."\*

GEO. B. GOODWIN,

*Consul.*

UNITED STATES CONSULATE,  
*Annaberg, September 16, 1886.*

#### METAL CROSS-TIES.

##### REPORT OF CONSUL TANNER, OF CHEMNITZ.

The question of metal cross-ties as a substitute for those of wood was first discussed in France about twelve years ago by French railway engineers, and many of the French railway lines adopted iron cross-ties as an experiment. Progressive movements are usually slow of recognition, but not so in this instance, as metal cross-ties came rapidly into favor in France, England, Belgium, and Germany.

For security on railways one of the most essential things is good track and road-bed. To achieve this security it is necessary that the rail should be retained precisely in the condition in which they were first made secure, forming a perfectly smooth and even surface for the rolling wheels. Cross-ties which support these rails, European engineers contend, should be a thoroughly stiff and unyielding frame-work, offering a complete resistance to the disturbing action of all the powerful forces which come into play during the passage of a train.

\*Mr. Baumann, I am informed, is a man in good business standing, and Americans having any article which they would like to introduce for sale in Germany would perhaps do well to correspond with him. He is a very energetic man and takes pride in introducing and pushing American goods to the front. It should be kept in mind that his establishment, which is at No. 22 Pragerstrasse, Dresden, is a sort of general store, and he would doubtless undertake the handling of anything likely to be salable, from a patent salve to an improved wringing-machine.

## WOODEN TIES.

Herr Pascher, a German engineer of some eminence, has presented the subject of iron and steel ties versus wooden, about in this way. Considering wooden cross-ties:

(1) The rail is forced down into the wood, altering the evenness of the track.

(2) Between the ties the rail is heavily strained and deflects, which alters the track level.

(3) Rails are forced sideways against the spikes, and these tear the wood, thus altering the gauge.

(4) The same sideways action tends to cant the rails outwards, pulling the inside spikes out of yielding wood.

(5) At the rail-joints the lack of continuity causes violent shocks, which produce rapid wear of material and rough riding.

(6) Ties shift both lengthwise and crosswise of the road, the correct lying of which is thus greatly disturbed.

(7) The constant decay of wood goes to increase all these evils in an accelerating ratio until the fastenings and the heads of the rails are worn out, and the whole, including a large portion of good material, becomes worthless.

## STEEL TIES.

Then, in order to a general betterment of railroad track, it is stated, as far as material is concerned, rails made wholly of Bessemer steel are decidedly the best rail; their advantages lie in their hard and crystalline structure, which wears slowly and regularly by sheer abrasion; splitting up and scaling off, as other rails frequently do, do not take place. Hence their duration is well known to be five times as great as iron rails of nearly the same price. One objection to them is their liability to break without obvious cause. Recent researches have demonstrated that this liability to break is more a matter of shape than material. The rail should simply act as a guide-bar for the motion of wheels, and is essentially separate from that part which serves to support the load or withstand shocks. In other words, the rail should consist of a head alone, so constructed as to connect simply and strongly with the tie below.

The rail should be made of material offering the greatest possible resistance to abrasion; in other words, the hardest allowable description of steel.

As regards cross-ties and fastenings, the ordinary wooden ties acting as supports to the rail and to preserve the gauge were sufficient for light loads and low speed; but their defects have long been manifest. The question was mooted at the sixth technical meeting of the German Railway Union, and it was seriously discussed at a conference of the leading German engineers held in Berlin in 1873; the wooden cross tie system was pronounced inadequate for the requirements of modern railways.

An exhibition of iron and steel cross-ties was recently held in Brussels at which almost every system now in use was shown. This would have been very instructive to Americans, who seem to take so much interest in this question.

I mention the fact to show the interest taken in this subject here in Europe.

To sum up the advantages claimed for steel cross-ties by their advocates over wood: Taking the metal cross-tie at double the cost of wood, its life is four times as long. When the metal tie is worn or

broken its original cost is only impaired to a small extent, as it can be sold again as old iron, or be rerolled for the same purpose it has already served, whereas a wooden tie becomes perfectly useless even as firewood after it is removed from the road-bed.

Of all the systems in vogue in Europe of metal ties, their fastenings, &c., the system of De Serras and Battig seems to meet with greatest favor. I will not take the space to review this. This system may be seen on the Austrian State Railway near Vienna, and I have heard it commended in high terms by engineers. As to cost, I am favored by an English engineer with a comparison of this system in this respect with the wooden cross-tie system :

*Items of cost per yard forward.*

Materials and labor.	Wooden cross-tie.	De Serras and Battig system.
	<i>s. d.</i>	<i>s. d.</i>
Nails .....	14 0	8 3
Fastenings .....	3 0	0 3
Cross-tie .....	5 7	16 9
Ballast .....	5 5	3 7
Laying .....	1 6	6 7
Total per yard .....	29 6	29 5

I think this will cover the inquiries of the letters I am in receipt of, with the exception of the manner of fastening the rail to the metal tie, and this varies so much in the different systems that even if a comprehensible description were necessary I would be puzzled to know which to describe, and cannot describe all.

I hope from what I have written that American railway managers will not hastily conclude that this new system, because it has proven superior to the old in Europe, will be equally so in the United States.

In certain sections of the United States where traffic is very heavy on railways and where there is much humidity, which would cause ties to rot quickly, metal ties might be profitably substituted for wood, but in the United States good wooden ties are plentiful and abound along the line of road, whereas in continental Europe they are imported from Russia, Norway, Sweden, and Canada, at enormous cost and are of inferior quality. This, with the depressed state of the iron trade in Europe, and the consequent low price of iron, has been no small factor in metal winning another victory over its weaker competitor, and superseding it as a cross-tie. In my opinion a long time will elapse before metal ties meet with as much favor in the United States as they have in Europe, though the metal tie is unquestionably the tie of the future.

GEO. C. TANNEH,  
*Consul.*

UNITED STATES CONSULATE,  
*Chemnitz, Saxony, September 12, 1886.*

## CIDER AT THE FRENCH EXPOSITION OF 1887.

REPORT OF CONSUL DUFAIS, OF HAVRE.

In connection with the International Exhibition of 1887 I have received a communication from the Syndical Chamber of Cider Manufacturers of this city, inviting the growers of apples in the United States to send exhibits of cider and of dried apples.

I inclose one of their circulars and a translation thereof.

Normandy and Brittany are great cider-producing and cider-consuming provinces. It is the drink of the middle and laboring classes, and an indispensable article. Since the ravages of the phylloxera amongst the vines the consumption of cider has very much increased, and even invaded wine-growing departments where formerly no cider was used.

Paris is said to consume from 15 to 20 per cent. more cider than five years ago.

Thus the apple crop is a very important one for the whole northwest of France, and this year it is turning out very short—some authorities say from 50 to 75 per cent. less than last year's crop, which, however, was far above an average one. In consequence cider apples, which last year sold for 1 franc (20 cents) the hectoliter (about 2½ bushels), are selling now for treble the price, or 3 francs (60 cents).

In the year 1884 the apple crop was also short, and there was as much cider made here out of dried apples as out of fresh ones, mostly imported from America.

Le Mans, in the department of the Sarthe, used to be the principal market for dried apples, but since American dried apples were imported this industry has lost most of its former importance, as our cider manufacturers prefer the American article.

There are only a few hundred barrels of old American crop here, and when the demand comes, as come it must, there will be an unusually good opening for American imports. The greatest consumption of dried apples is towards summer, when the stock of cider runs down and when manufacturers use them to sweeten the old cider which is left over, as well as to replenish their cellars with new.

The sort of dried apples most current for cider manufacturing are chopped apples, with skin and core, and evaporated in hot rooms (not sun-dried). The present value may be given at from 36 to 38 francs per 100 kilograms (\$6.95 to \$7.50 per 220 pounds), in bond. The duty on this sort is nothing, but the city of Havre levies an *octroi* of 16½ francs per 100 kilograms (\$3.18 per 210 pounds) on what is consumed in the city.

Sun-dried, peeled, and sliced apples pay an import duty of 6 francs and *octroi* of 12 francs (\$2.32) per 100 kilograms, and are worth from 24 to 26 francs (say \$4.80 to \$5 per 220 pounds), in bond.

Both duty and *octroi* are not included in the prices given, and are paid by the buyer.

I shall be happy if this communication proves of some interest to our fruit-growers.

F. F. DUFAIS,  
Consul.

UNITED STATES CONSULATE,  
Havre, France, September 8, 1886.

[International Maritime Exhibition at Havre, under the high patronage of the ministers of foreign affairs, of marine and colonies, and of commerce and industry, with co-operation of the city of Havre the Chamber of Commerce and General Council of the Lower Seine, 1887.]

SYNDICATE OF CIDER MANUFACTURERS  
OF THE CITY OF HAVRE, 40 RUE BORDEAUX,  
Havre, ———, 1886.

SIR: We have the honor to send you herewith the general dispositions taken by the cider manufacturers of the city of Havre for the organization of the group of cider at the International Maritime Exhibition which will be opened from the 1st day of May to the 30th of September, 1887, with faculty of being prolonged to the 15th of October.

Desiring that the small manufacturer should take part in the exhibition, without great expense, we have subdivided the meter (3 feet) and established a special tariff in consequence.

The commission of organization:

F. LEFRANT,  
*President.*  
MALLEUX,  
POULAIN,  
POUPEL,  
*Members.*

GENERAL DISPOSITIONS.

*Tariff.*—In compensation of the expenses of arrangement and general decoration of the exhibition, the space occupied by every exhibitor is for his part subject to a re-partition per superficial square meter, calculated in the following manner:

Horizontal surface up to a height of 3 meters, from 1 to 25 meters, 35 francs (\$7) the square meter; each square meter above 25 meters, 30 francs the square meter; over the height of 3 meters up to 6 meters, 10 per cent. more. No space pays less than 1 meter. Isolated or corner installations will be calculated as having an equal surface to the development of the parts seen multiplied with their depth of at least 1 meter.

French or foreign exhibitors may address their wares to agents of their own choice and to let them attend to the unpacking, handling, installation, and returning the goods, only conforming to the rules. The syndicate, however, will undertake all these operations, if desired, for a lump sum.

SPECIAL TARIFF FOR THE EXHIBITION OF CIDER, CIDER BRANDIES, AND COLORING MATTER.

25 francs for	3 bottles exhibited.
30 francs for	6 bottles exhibited.
50 francs for	12 bottles exhibited.
75 francs for	18 bottles exhibited.
100 francs for	24 bottles exhibited.
150 francs for	36 bottles exhibited.

All expenses included, space occupied, material of exhibition, watching, and maintaining.

Transporting and repacking at the charge of exhibitors. Exhibitors desiring to send pictures or medallions to be put on shelves have to ask for an allotment of space for 24 bottles.

Bottles to be exhibited may be empty or filled with colored water.

Three bottles of each type or quality have to be furnished for the tasting by the jury.

The exhibition being really a bonded warehouse, foreign products are temporarily admitted, and therefore pay no duty whatever.

Exhibitors are authorized to inscribe after their names or the firms' names those of their collaborators who have contributed to the excellency of their products.

The charges for space occupied will be collected by the syndicate, one-half a week after admission, the other half a fortnight after the opening of the exhibition, under penalty of immediate removal.

Applications for admission, as well as inquiries regarding the exhibition, must be addressed to the president of the Syndicate of Cider Manufacturers, 40 rue de Bordeaux, Havre.

*General classification, International Maritime Exhibition, 1887.*

**First class.**—Publications about France, Algiers, America, or other countries cultivating cider apples; publications of agricultural societies; statistics; tables of fruits for cider-making; meteorological and geological tables of agricultural societies; works and scientific collections concerning fruits for cider-making and cider brandies; ways of making cider in different apple-producing countries; models of cider mills and stills; plans, sketches, drawings, models, embossed.

**Second class.**—Ciders of pears in barrels and bottles; cider brandies; dried apples, French and foreign; essence of apples and of apple brandies; imitation cider; sweetening and alcoholization of cider; coloring for cider; pastes for cider and cider brandies; cider vinegar.

**Third class.**—Machinery, utensils, and implements for the cultivation of apples and cider manufacture; machinery for distilling; machinery for heating cider.

**Fourth class.**—Special competition for teachers and pupils occupied with cider fruits and cider.

The commission of organization :

F. LEFRANT,  
*President.*  
MALLEUX,  
POULAIN,  
POUPEL,  
*Members.*

*International Maritime Exhibition at Harre, 1887.—Application for exhibiting.*

[Division ———; class ———; group ———; country ———; where from ———; name (Christian name or firm) ].

Nature and approximative number of articles.	
Space wanted. Horizontal surface. Mural surface covered.	
Indicate dimensions wanted. Façade. Depth. Height.	
Indicate whether isolated or corner room wanted.	
Indicate whether exhibit wanted in a kiosk. Glass case. On shelves. On socle.	
Indicate whether previously received premiums at exhibitions, and which or where.	
Indicate whether an accredited agent is appointed; give his name and address.	

Extract of general regulations: Art. 38. French or foreign exhibitors declare their adherence to the rules, general and special, knowledge of which they own, and also to regulations which may further be published.

At ——— the ———, 188—.

[Signature.]

**BREEDING AND REARING SWINE IN DENMARK.**

*REPORT OF CONSUL RYDER, OF COPENHAGEN.*

This subject has formed matter of frequent discussion of late in the agricultural journals here, inasmuch as it has been found that the over-fattened swine of the improved breeds are viewed with disfavor at the swine-slaughter establishments and on the larger markets, and that sales can only be effected at considerably lower prices than are obtainable for the more fleshy and lightly fattened animals. It is recommended that breeding stock should be imported of the Tamworth race, which fully respond to the demands made by their English customers, namely, more flesh and less fat. Several years back, when agriculture stood at a much lower level than in the present day, the swine were sent to seek their food in the woods, receiving from the household and dairy as a rule but a very meager amount of leavings. Such a system of carrying on of swine culture was a near approach to these animals' natural mode of living, and their build and appearance bore a close resemblance to that of the animal in its wild state. They were hardy, small, and high-backed, with a large head, large ears, and long bristles. As the muscular system by this mode of living was developed in a more natural manner, the produce of these swine was more fleshy and less fatty than with the animals of the present day. In consequence of this sparing mode of nourishment, however, they met with but slow development, and would no longer satisfy the demands of an advanced state of agriculture in respect to plumpness and rapid growth.

In England their swine races have been greatly improved; and it is notably so with the old Yorkshire breed, which, with good feeding and careful attention, has been developed in the direction of better shape and plumpness. At the same time English agriculturists have not allowed themselves to rest content with these efforts, but have imported swine of Chinese and Siamese races, which had already at the time shown great development in the direction of fattening properties, with a corresponding depth and breadth of build. The same endeavors towards the raising of a rapid-growing herd of swine has in later years been constantly kept in view by the agricultural classes of this country, and with this object in view, breeding stocks from other lands' improved races have been imported. These attempts have been crowned with so great success that the swine in very many parts of the Kingdom are now fully able to compete, as regards plumpness, fattening properties, and rapid growth, with the best-developed breeds. At the same time this is in a great measure due to greater care and attention, as well as to a proper course in feeding the animals. The considerably higher prices paid by the hog-slaughtering establishments in later years for the lean as compared with the overfattened carcasses has naturally been the means of proving to the farming community the absolute necessity of raising a class of animals that will satisfy the demands of their exporting customers; and it is now being impressed upon them that the introduction of the Tamworth or other improved races will of itself not be all-sufficient towards the attainment of this object. Pursuant to the natural laws which hold good in respect to the development of the different organs and textures, it is maintained that even if these races are introduced throughout the country it would not be long before a com-

plaint of overfatted animals would again be heard unless greater care and attention were given to the animals than have been given in the course of the past years. The use of the animal, breeding and care, are the essential factors in the improvement of races, whilst crossing of the breeding stock of the different races possessing the desired qualities only assists in arriving somewhat more quickly at the point it is sought to attain. That the Yorkshire breed had been greatly developed in the direction of their fattening qualities and rapid growth, simply by the employment of greater care, and before the Chinese and Siamese swine were introduced, is ample evidence of this.

The hog is specially disposed to become fat; when, therefore, the production of more fleshy pork is desired this tendency must be counteracted, and this may be accomplished in two ways: first, and foremost, by devoting strict attention to promoting an increased development of the muscular tissues, which is to be obtained by exercise. Simply speaking, one should seek to adapt the rearing and care of the breeding stock, as also the young animals, somewhat more to the animal's natural mode of life. With a strict carrying out of this course of procedure, constant exercise in the open air, and a less exuberant style of feeding; with the substitution of such kind of food as contains the most suitable nutritive conditions for the formation of albuminous matter in the muscular tissues, it will be possible in several generations to transform the present race, with its broad and deep shape and with its strong disposition to accumulate fat, to that of a fleshier race.

That this result could perhaps be more quickly attained by the importation of such parent stock as already possessed the desired qualities, is self-evident. It is not, therefore, the intention to oppose the proposed introduction of the Tamworth race; but it is mainly the desire to draw the attention of all those concerned that this can only have a radical significance in respect to swine culture when breed and proper care and attention are working together in full harmony. Finally, it is recommended that both the breeding stock as well as the young animals should in the summer months be turned out on the fallow fields, and in the autumn on the grass fields, which later on will be coming under the plow; wherewith they will at the same time be rendering good service to the farmer by the grubbing up of roots and larvæ, which, as is well known, swine in their natural instinct greedily seek after. The remaining quantity of fodder may consist of an appropriate admixture of roots and dairy leavings, whilst to such animals as are intended for fattening a certain amount of corn grounds should be added.

HENRY B. RYDER,\*  
*Consul.*

UNITED STATES CONSULATE,  
*Copenhagen, August 10, 1886.*

\* See also Consul Ryder's reports on the same subject, printed in Consular Reports No. 46, October, 1884, p. 279, and No. 51, March, 1885, p. 578.



**THE DIAMOND MINES OF NEW SOUTH WALES.**

*REPORT BY CONSUL GRIFFIN, OF SYDNEY, N. S. W.*

Although diamonds have been known to exist in various parts of Australia for the last thirty or forty years, no serious effort has ever been made to conduct any systematic mining operations for them except in the colony of New South Wales. I regret not to be able to give the exact period at which diamonds were discovered in Australia or when their value first became known. It is certain, however, that for a considerable period no importance was attached to their discovery on account of their small size, and also from the prevailing opinion that they were only a species of colorless topaz.

The Rev. W. B. Clark, in a valuable paper on the mineral resources of the colonies, makes mention of the discovery of diamonds on Macquarie River in New South Wales in the year 1860. No mention, however, was made as to their size or value, or of the conditions under which they were found.

In 1867 attention was directed to the discovery of diamonds on the Cudgegong River, also in the colony of New South Wales, about 20 miles from Mudgee and 170 miles from the city of Sydney. In the same year their discovery was reported at Beechwood, Victoria, and in various localities amongst the gold-bearing reefs of South Australia.

Professor Liversidge, of the Sydney University, to whom I am principally indebted for the material of this report, has given much thought and study to the occurrence of diamonds in Australia. He visited the mines at Bingera in 1873, and has ever since taken the deepest interest in the progress of the work there.

**THE MUDGEES MINES.**

Amongst the material placed at my disposal by Professor Liversidge is a very valuable paper entitled "The Occurrence of the Diamond near Mudgee," by Mr. Norman Taylor, of the Victorian Geological Survey, and Prof. Alexander M. Thomson. From their paper I learn that diamonds were first seen in the Mudgee district, at a place called Two-Mile Flat. Little attention, however, was paid to the discovery until the spring of 1869, when the search was taken up briskly by the Gwydir Mining Company and by several independent parties. The localities producing the diamonds are situated along the Cudgegong River, beginning at the junction of the river with Waldra Creek and extending to Hassal's Hill, a distance of 7 miles. They are said to be more numerous in the outliers of an ancient river-bed. These outliers occur at various distances from the present channel, and at elevations of about 40 feet above it. Mr. Taylor and Professor Thomson state that these outliers of drift are capped by hard, compact, and, in many instances, columnar, basalt. They have all the characteristics of the widespread deposits in Victoria, which the Geological Survey there has been accustomed to assign to the older Pliocene. The patches of diamond-bearing drift (older Pliocene), with their protective coverings of basalt, though once forming parts of a continuous deposit, have been isolated by extensive denudations. The point of eruption from which the basaltic flow emanated appears to lie to the eastward, but it has not hitherto

been detected. Its remnants can be followed up for at least 19 miles along the river, in some spots still showing a thickness of 70 feet, which proves the igneous outburst to have been of considerable magnitude, sufficient to alter materially the physical aspects of the river valley.

The various outlets of the older Pliocene drift containing diamonds are enumerated and described by Mr. Taylor and Professor Thomson as follows:

(1) The dimensions of the first area cannot be fairly estimated, as much of the basalt has been covered up by various surface accumulation. It lies partly on private ground and has been insufficiently explored; 100 acres might be taken as an estimate of the working as far as yet developed.

(2) Jordan's Hill: Three miles below, on the left bank, a triangular basaltic area of about 40 acres.

(3) Two-Mile Flat: Three miles below the last, at some distance on the left bank, comprising five basaltic knolls and ridges at various intervals along a large elliptical curve that the old channel followed, but which the present river has cut off. Computed altogether at about 70 acres.

(4) Rocky Ridge: On the right bank, 1 mile below Two-mile Flat, a scarped basalt hill, extending a short way up a tributary creek. About 40 acres.

(5) Horseshoe Bend: On the left bank, opposite the Rocky Ridge, a crescent-shaped area of basalt, with its concavity facing the river. About 20 acres.

(6) Hassall's Hill: A similar crescent area, with its convexity towards the river, situated half a mile southwest of the Horseshoe, and covering about 340 acres.

The drift rests on vertical indurated strata, or on massive greenstone. Diamonds have been found in a younger drift, occurring at a lower level, containing decomposed pebbles of basalt. Mr. Taylor thinks that the diamonds in this drift have been washed out of the older deposit. Diamonds have also been extracted from the water holes in the river, but whenever this occurs the older Pliocene drift has been discharged there by the diggers when gold was the object of their search.

The following is a list of the gem stones and heavy minerals found in the drift: (1) Black vesicular pleonast; (2) topaz; (3) quartz; (4) corundum; (5) zircon; (6) tourmaline; (7) black titaniferous iron sand; (8) black magnetic iron sand; (9) titanite, probably brookite, in flat red, transparent, or reddish-white translucent plates; (10) wood tin; (11) garnet; (12) iron slag, fragments of slightly rusted iron; (13) gold, fine, scaly, and occasionally fragments inclosed by quartz; (14) the diamond itself is distributed irregularly through the older Pliocene river drift.

At Hassall's Hill 33 loads from one claim yielded 306 diamonds. Another claim yielded at the rate of 8 diamonds to the load. Out of 5,000 or 6,000 diamonds found, very few were of any considerable size, the largest being a colorless octahedron, weighing  $5\frac{1}{2}$  carats. It was found in the river, between Two-Mile Flat and the Rocky Ridge, at a spot where the older Pliocene drift had been discharged in gold washing. A majority of the stones were pellucid and colorless, many were straw-colored, and a few of dark green and black. Those engaged in mining for the gems were obliged to give up their work on account of the scarcity of water and the heavy expense incurred in extracting the drift from the basalt. The method adopted by them in washing for the diamonds, when water could be obtained, consisted in screening the drift so as to separate the larger stones. The coarser portion of the clay was then raked aside, so that the gold and finer matter could be carried away by a stream of water flowing through an iron grating on the water-blankets below. One of Hunt's ore-separating machines was used to separate the heavier from the lighter material

that passed over the blankets. After the reduction of the material by this process, the diamonds were readily distinguished.

Water is now said to be more abundant than formerly in the Mudgee district, and a new company has been formed for the purpose of conducting operations on an extensive scale. The company, it is said, will be supplied with the latest improvements in machinery and diamond-mining appliances.

#### THE BINGERA MINES.

The Bingera diamond mines are located on the Gwyder River, 8 miles from the town of Bingera and about 350 miles northwest of the city of Sydney. The route there is by steam to Newcastle, a distance of 60 miles, and thence by railway to Tamworth, 200 miles, and the remainder of the journey is performed by coach.

According to Professor Liversidge, the Bingera diamond deposits are situated in a kind of a basin or closed valley amidst the hills. The basin is 4 miles long and 3 wide, and opens toward the north. Running into the valley are various spurs of basalt, covering portions of the drift. The drift is 30 or 40 miles in length, and is thought to be the forsaken bed of the river Horton. The rocks upon which the diamond drift rests consist of argillaceous shales. In one part of the ground the shales are joined by silicious conglomerates, and there the diamonds are most abundant. The pebbles and bowlders consist of various-colored jasper, white quartz, black flinty slate, &c. I append hereto a list of gem stones associated with the diamond at Bingera, furnished me by Professor Liversidge.

#### GEM STONES ASSOCIATED WITH THE DIAMOND AT BINGERA.

(1) Tourmaline, or jet-stone, occurs as rolled prisms, usually from one-fourth to three-fourths of an inch long. They usually retain the trigonal section, but occasionally no trace of crystalline form is left, and they appear merely as more or less rounded black pebbles, often with a pitted surface, totally unlike the usual appearance of tourmaline. The blow-pipe decides their character at once. These black jet-stones are invariably found with the diamond, and are regarded by the miners as one of the best indications of its presence.

(2) Zircon occurs in small crystals of red and brown colors, also nearly colorless, but more commonly as rolled pieces of a brown shade. A cleavage plane is usually to be seen.

(3) Sapphire, generally in small angular pieces, and usually of a pale color. In many the blue tint does not overspread the whole of the fragment. The ruby is present, but very rare. One fragment showed the faces of an acute hexagonal pyramid and basal pinacoid. The lower half of the crystal had been fractured. The fragments of sapphire are far less in size than those found at Mudgee and in New England, and far less rolled. The major part often appears to have undergone no rounding at all, thus showing a broad distinction between it and the gem sand at Mudgee.

(4) Topaz, as rounded fragments, and sometimes with rough crystalline outline. They are generally of a dull yellowish color.

(5) Garnet in small, rough-looking, ill-formed crystals of a dull red shade.

(6) Spinelle, not very common; generally in small red or pinkish fragments.

(7) Quartz, small prisms, capped, with the pyramid more or less rolled; transparent, of a pale red, smoke color, &c. Amongst the jasper peb-

bles are some of pale mottled tints of yellow, pink, drab, brown, bluish gray, &c. These are termed "morlops" by the miners, and are regarded by them with much favor, as they say that they never find one in the dish without diamonds accompanying it. The average specific gravity of the morlop is 3.25, nearly the same as that of the diamond; hence the reason of their being found together. They are oval in form, smooth, and rarely exceed a quarter of an inch in length. The miners are unable to tell how the name originated, and there is no mention of it in any work on mineralogy.

(8) Brookite, small flat fragments, very rare.

(9) Titaniferous iron, rather common.

(10) Magnetic iron ore, in small grains, showing an octahedral form under the microscope; coated with hydrated sesquioxide of iron, easily removed by the magnet. Gold in small particles was often found attached to the grains of the magnet.

(11) Wood tin; rare, in small rolled particles.

(12) Gold; fine grains and scales present, but in small quantity, and the greater portion attached to the magnetite; hence the magnet was used for removing it.

(13) Osmiridium, in small, brittle plates; rare.

(14) Diamonds; small size, clear, colorless, and transparent, while others have a pale straw or yellow tint. One or two small size of very dark color have been seen; also, a green one. Nineteen specimens were examined, and their specific gravity found to be 3.42, that of the Mudgee being 3.44. In some the crystalline form is distinctly shown, but a number of others have rounded faces.

The following table shows that the yield of the Bingera diamond drift is about twenty diamonds to the ton.

*Table showing the yield of the Bingera diamond drift.*

	No. of diamonds.
6 tons of drift.....	41
4½ tons of drift.....	143
6 tons of drift.....	88
6 tons of drift.....	125
6 tons of drift.....	163
Refuse from the machines.....	41
Total.....	690

In 1873 diamonds were discovered at Bald Hill, in the Tournon district. Three stones obtained there were sent by the minister for lands to Professor Liversidge for examination. The professor, in reporting upon the same, said that the largest stone was in the form of a six-faced octahedron, rather flattened, owing to four of the groups of faces being more highly developed than the other four. The faces and edges were rounded somewhat, but Professor Liversidge did not think that the roundness was caused by attrition, from the fact that diamonds not unfrequently crystallize with curved faces and rounded edges. The stone was clear and colorless and perfectly free from all visible internal flaws. It possessed a specific gravity of 3.58 and weighed a little over three carats. The diamond next in size possessed the same crystallographic form, but was less compressed. Its weight was 1½ carats. The third specimen weighed about half of a grain, and was of high luster, but imperfect in color.

Accompanying the diamonds were two small boxes of gem sand. None of the gems contained in the sand, except the diamonds, were of any commercial value, except for polishing purposes. The professor

stated, however, that they were of great value as indications, for where such occur there is every prospect of finding others of larger size and better quality. The following is his report upon the same :

#### GEM SAND No. 1.

In this the following substances were found to be present :

- (1) *Corundum*.—When blue this is known as the *sapphire*, and when red as the *ruby*.
- (a) *Common corundum*.—Present in small fragments of bluish, greenish, and gray tints.
- (b) *Sapphire*.—In small particles of a blue color, some so dark as to appear almost black, and others very light. Some of the fragments still show their crystalline form, viz, a hexagonal pyramid, but most of them do not, and are either much rolled, sub-angular, or angular in their outline.
- The ruby is absent, but probably would have been present had the sample of gem sand been larger.
- (2) *Zircon*.—Plentiful, usually in the form of much-rolled pieces. Generally of a brown color, sometimes red, and at others nearly colorless. The small and nearly colorless crystals possess a very high luster, almost equal to that of the diamond, so that they might readily, without careful examination, be mistaken for that gem.
- (3) *Quartz*.—Usually as small, well-rolled grains, either colorless, milky, or yellowish. Sometimes as hexagonal prisms, capped with the hexagonal pyramid. Jasper of various colors, such as red, yellow, gray, also occurs, together with black grains of flinty slate.
- (4) *Rutile*.—In angular fragments, still showing traces of crystallization. Distinguished by its brown color and metallic luster, and by the presence of numerous fine striae on the faces of the prism. It very much resembles tin-stone in appearance. In composition it consists of titanic acid.
- (5) *Brookite* also occurs. This is another form of titanic acid. Rutile crystallizes in striated tetragonal prisms, whilst this crystallizes in tabular forms belonging to the rhombic system. It is present in small quantity, in the form of flat, irregular plates, brown or gray in color.
- (6) *Topaz*.—Present in small rolled and angular fragments, colorless, and in pale tints of yellow and greenish blue. The latter-colored topaz is often erroneously termed the aquamarine.
- (7) *Beryl or Emerald*.—Doubtful, but one or two very small fragments resembling it.
- (8) *Garnet*.—Small, rough, common garnets, of no value.
- (9) *Tourmaline*.—A few rounded pieces, but none showing the crystalline form, which is that of a three-sided prism.
- (10) *Gold*.—Present in the form of scales.

#### GEM SAND No. 2.

This consists of larger grains than No. 1; in fact they are small pebbles.

- (1) *Quartz*.—Present principally in the form of jasper, of various colors, red, brown, green, yellowish, &c.; also variegated. Colorless and yellow quartz pebbles are also found, together with black pebbles of flinty slate.
- (2) *Corundum*.—Present as common corundum, and as the sapphire.
- (3) *Brookite*.—Same as gem sand No. 1, only in larger pieces.
- (4) *Topaz*.—Clear and colorless; also tinted.

Mr. Wilkinson, the government geologist, stated in his annual report for 1884 that he is fully convinced that diamond mining will soon form an important industry in the colony. The mines, he says, would have been developed earlier but for the want of water. He commends very highly the prompt action of Messrs. Falk & Co. in sinking for water at Bingera. Mr. Harrie Wood, under-secretary for mines, in a recent report fully agrees with the views expressed by Mr. Wilkinson in regard to the prospects of the industry. Mr. Wood states that the Australian Diamond Mining Company obtained at Doctor's Creek, Bingera, 1,193 diamonds, weighing 254 carats, when the water gave out. They raised 5,000 tons of drift but were unable to wash out more than 400 tons. The drift was found by Messrs. Powell and party. The Craddock party had a small wash of about a half a ton, which yielded 17 diamonds. Messrs. Dinsey & Co. also obtained a number of diamonds, but had to

abandon the drift on account of the scarcity of water. Mr. Wood reports the discovery of diamonds at Fingha, near Big River, Auburn Vale, and at Berrema and Inverell. A few have also been found in the Mettagong, Wellington, and Uralla districts. Those found at Auburn Vale and Berrema were said by London experts to be of the very best quality, superior in every way to those of Cape Colony, South Africa. Mr. Wood is of opinion that the mines at Fingha will eventually prove the richest in Australia. The department is at present engaged in sinking a shaft there which is expected to develop very rich diamondiferous material.

The Australian Diamond Mining Company about eighteen months ago purchased a lease of 40 acres for which they paid \$20,000. They have also incurred considerable expense in the erection of machinery, in sinking for water, &c. As yet no stones of large size have been found by the company, but even at the celebrated Kimberly mines in South Africa, one large stone in 10,000 is the general run, and one-half a carat per ton of drift is considered a good result for a diamond mine. Mr. Wood informed me that he received a telegram a day or two ago from the manager of the Australian Diamond Mining Company at Bingera, stating that they had just cleaned up 87 loads of drift, yielding 1,139 diamonds weighing 209 carats. This is the best yield the company has had. A subsequent telegram states that some of the stones were larger than any which have hitherto been found, and that six men only were employed for a period of ten days in breaking up, carting, and cleaning the drift.

Mr. Wood is of the opinion that these satisfactory results are likely to continue. He also informed me that the department of mines has been endeavoring during the last two years to test fully, by actual trial, the utility of New South Wales diamonds for drill purposes. He said that Mr. Slee, the chief inspector of mines, had recently made a very satisfactory report upon the subject, and that at Heathcoat, near Coal-cliff, a Bingera diamond stood the test of boring 1,267 feet through thick layers of hard sandstone and conglomerates, the latter being especially injurious to drills, and yet without the slightest fracture. In order to direct further attention to the diamond industry Professor Liversidge will forward to the Indian and Colonial Exhibition to be held in London during the present year a collection of New South Wales diamonds, among which are the following:

	<i>Gram.</i>
1 diamond, tetrahedron, Lachlan River, New South Wales .....	.115
9 small diamonds, Bingera, New South Wales .....	.335
1 diamond, dark, in octahedron, Bingera, New South Wales .....	.290
1 black diamond, mudgee, Bingera, New South Wales .....	.735

The professor will also forward a few Cape Colony diamonds for the purpose of comparing their matrix with that of the specimens from New South Wales.

A parcel of Bingera diamonds placed on the London market in September last averaged £1 12s. (\$7.77) per carat, while the highest average of the Cape diamonds during the same month was only 18 shillings (\$4.38) per carat. Another parcel of New South Wales diamonds, weighing 126 carats, brought in London £1 10s. (\$7.29) per carat. These were obtained from 127 tons of drift, averaging nearly 1 carat per ton. A few months previous to this shipment a parcel was sent to London weighing 40 carats, obtained from 80 tons of drift, equal to 2 carats per ton.

The manager of the Australian Diamond Mining Company estimates the cost of washing for diamonds at 2s. 6d. (60 cents) per ton of drift.

He states that they can wash easily, with one machine, 200 tons of drift per day, and even if the average should be no higher than  $\frac{3}{4}$  carat per ton the net profits would be considerable. He is very decided in the opinion that the Bingera stones are far superior to those of the Cape. It will perhaps be of interest to mention here that the geographical position of Bingera is almost identical with that of the celebrated Kimberley mine of South Africa, both being situated on the thirtieth parallel of south latitude. Another striking coincidence is that the coast-line of Bingera bears from northwest to northeast at precisely the same angle as that of Kimberley. There is also a dividing chain of mountains in both places at about the same distance from the coast-line, and moreover the diamonds are located within the chain of mountains in each case at an equal distance from the coast-line. I have thought to mention before concluding this report that the production of the South African diamond mines during the month of July, 1885, was in round numbers, 170,000 carats, valued at 18s. 5d. (\$4.48) per carat. In October, 1882, the production was 211,746 carats, which realized £1 13s. 7d. (\$8.16) per carat. From this it will be seen that the tendency of the price of South African diamonds is downwards. The production it is said has also been affected by serious falls of reef. It took the various diamond mines of the world two centuries, previous to 1870, to produce fewer diamonds than the celebrated Kimberley district has placed upon the market during the last fifteen years.

The steady decline in the price of diamonds has led to the conclusion that the South African mines have been allowed to produce too rapidly, and this state of affairs, it is said, is forcing the amalgamation of the various diamond companies.

G. W. GRIFFIN,  
*Consul.*

UNITED STATES CONSULATE,  
*Sydney, N. S. W., January 15, 1886.*

## NOTES.

**Liquor traffic on the Congo.**—Consul William W. Lang, of Hamburg, writes as follows, under date of September 13, 1886:

The export of intoxicating liquors from this port to the Congo and other parts of Africa were for the years 1884 and 1885 as follows:

[In quantities of 100 kilograms.]

Liquors.	1884.	1885.
Cognac .....	402	194
Rum .....	111,549	108,356
Alcohol .....	10,498	7,218
Gin .....	222,529	207,995
Cordials, &c .....	6,812	7,105

These statistics are furnished by a statistical bureau of the city of Hamburg.

There is no official register of the exporters to African ports, and it would be almost an endless undertaking to ascertain the names of the persons who exported the liquors. It can only be done by a personal inquiry into every export of liquors from Hamburg for the years above mentioned.

**Cryptogamic diseases of the vine.**—Consul Frisbie of Rheims, writes as follows, under date of September 8, 1886:

The Viticultural Congress of Bordeaux has adopted the following conclusions drawn from the report of the commission on cryptogamic diseases of the vine:

From the report on cryptogamic diseases, and others, of the vine, phylloxera excepted, it appears that—

(1) *For mildew.*—The treatment with the Bordelais wash, having for basis cupro-ammonium, being a solution composed of 16 pounds of sulphate of copper dissolved in 100 quarts of water, and 30 pounds of quicklime dissolved in 30 quarts of water, and the two solutions then blended into one, and applied with a suitable brush, and the system Audaynaud (celestial water, so called), have in general given good results.

With the Bordelais wash the treatment should be preventive and employed before the appearance of the *peronospora*; that is to say, in the first days of June. Also, that a second treatment should be immediately adopted if, notwithstanding the first, the disease shall continue to make its appearance.

The sulphate of copper used in the Bordelais wash should be tested as to its purity.

The quicklime employed in the mixture ought to be slaked before being blended with the solution of sulphate of copper.

(2) *For the anthracnose.*—That the double washing with sulphate of iron ought to take place during February or March, a fortnight before the appearance of the young shoots (probably in March or April in most parts of the United States).

Washing with the Bordelais wash will produce good results if said wash is exceptionally composed of 15 per cent. of sulphate of copper.

Sulphuric acid produces more durable results than sulphate of iron used only once; it has also the advantage of keeping off the caterpillars.

(3) *For the coulure.*—Annular incision can in a general way be tried, but with great precautions, as, so far, results are rather contradictory; as trials, coverings are recommended as much against coulure as frost and all cryptogamic diseases.

**Review of present state of the woolen trade.**—Consul Charles P. Williams, of Rouen, writes as follows, under date of September 2, 1885:

Business remains unchanged. Some manufacturers dealing with the East felt alarmed by the recent events in Bulgaria, but it does not seem likely, for the present at least, that it will influence commerce.



Business in Sedan is looking up again. The houses have large orders to fill between this and the 30th of September. They sell satins, eider-down, but above all some of the best cassimeres. Louviers has plenty of work. Some manufactories are even overburdened with orders. The factories from the south ship quite large quantities of tissues at a low price.

In the interior some work is done, but it is not remunerative. The spinning and weaving of combed wool maintains its activity at Roubaix. At Fourniers the price of woollen drapery is advancing.

At the commencement of the month, at Bradford, the demand for woollen thread constantly increased, notwithstanding the rise in price of the yarn. The advices from Huddersfield are not less satisfactory.

The arrival of summer weather has caused increased sales in summer tissues. On the 19th of August the demand for thread increased, but exporters were inclined to purchase at rather lower prices than met the views of spinners. There are large orders for single thread at higher prices.

The buyers object to this new rise in price. The same applies to the double thread. There is a good demand at full prices for colored and mixed thread. The spinners of mohairs have raised their prices. The spinners of the country have good orders, and the prices are in their favor. The sale of tissues improves. Orders are received for ordinary and fancy articles, given by the buyers for home use in increasing quantity.

From America increased demand is noticed, specially in cashmeres and coating cloths. Up to the present time there is no indication that manufacturers can advance their prices in proportion to the value of the raw material. The market of the 23d of August felt the influence of the Bulgarian news. There was weakness, particularly in cloths.

At Berlin the thread market has been more animated for the last few weeks. An extraordinary rise took place in combed thread, and another is expected, provided the consumption still increases. However, they say in Germany complaints are made of the constant diminishing of exportations of woollen cloth. All the specialties feel the pronounced depreciation, which shows itself in all the products of the Empire.

**State of the woollen trade.**—Consul Charles P. Williams, of Rouen, writes as follows, under date of September 20, 1885 :

A new and important advance in the price of wool has been noted in the fourth series of London sales. Compared with the last sales the price has advanced 25 per cent. for Australian and Cape wools, and 10 per cent. for crossed. It was noted that the English and German buyers, who had cautiously operated at former, purchased largely at this sale.

Bids on different lots started as soon as offered, without hesitancy, and the bidding was active among the numerous local and foreign buyers.

The table of the foreign woollen trade of France for the seven months of the year 1886, compared with that of the corresponding preceding years, presents the following fluctuations. The values are expressed in thousands of francs :

Description.	Imports.			Exports.		
	1886.	1885.	1884.	1886.	1885.	1884.
Wool .....	219, 857	207, 718	238, 718	53, 706	55, 641	52, 415
Woolen yarn .....	8, 466	14, 149	9, 759	17, 878	16, 474	14, 778
Woolen cloth .....	36, 866	41, 667	47, 007	201, 684	181, 560	180, 204

According to the official figures of the British minister of commerce, the following is a comparative result of the imports and exports of Great Britain in wool and its products during the first eight months of the year 1886 and 1885.

The imports of pure and mixed woollen yarn from January 1 to August 31, 1886, amount to 36,421,625 francs, an increase of 8,193,050 francs.

The imports of woollen; or woollen and cotton mixed cloth, amount to 111,473,350 francs, and show an increase of 15,353,025.

The exports during the same period were: woollen yarn, combed and carded, 69,516,525 francs, a decrease of 1,637,550 francs.

The exports of cloth, for men's wear, 157,906,050 francs, an increase of 1,560,125 francs; cloths of combed wool dresses, woollen cloths for ladies' use, 120,363,450 francs, an increase of 7,018,975 francs, which makes the total increase of 6,941,550 francs of the product of wool from Great Britain during the first eight months of this year.

**Coloring of alimentary substances, and of the paper used in enveloping them.**—The following decree has been issued by the prefect of the Gironde, and transmitted to the Department by Consul George W. Roosevelt:

We, prefect of the Gironde, officer of the national order of the Legion of Honor, by virtue of—

- (1) The law of August 16, 24, 1790, and that of July 22, 1791;
- (2) The articles 319, 320, 471, and 477 of the criminal code;
- (3) The law of May 27, 1851;
- (4) The ministerial instruction, dated May 25, 1881;
- (5) The law of April 5, 1884;
- (6) The circular of the minister of commerce of March 30, 1885;

Considering that serious accidents have been caused by the employment of venomous and poisonous matters in coloring alimentary substances and by the papers used to envelop them, we decree:

ART. 1. It is expressly prohibited for confectioners, distillers, grocers, and dealers in general to employ in the coloring of sugar-plums, lozenges, candies, liquors, and alimentary substances whatever, any of the following coloring matters:

#### MINERAL COLORS.

Compounds of copper: Blue ashes, mountain blue.  
Compound of lead: Massicot, red lead, black lead, orange.  
Oxychlorure of lead: Cassel yellow, Turner yellow, Paris yellow.  
Carbonate of lead: White lead, ceruse, white of silver.  
Antimony of lead: Naples yellow.

#### SULPHATE OF LEAD.

Chromate of lead: Chrome yellow, Cologne yellow.  
Chromate of baryta: Outremer yellow.  
Compounds of arsenic: Arsenite of copper, schelle green, schweinfurt green.  
Sulphuret of mercury: Vermilion.

#### ORGANIC COLORS.

Gamboge: *Aconitum napellus*, fuchsine, and its immediate derivatives, such as Lyons blue.

Eosine: Coloring matters containing among their elements nitrous vapors such as the yellow of naphol and Victoria yellow. Coloring matters prepared by the aid of diazoic compounds, such as tropeolines and red of xyloidine.

It is prohibited for manufacturers as all dealers in general to sell or to exhibit for sale sugar-plums, lozenges, candies, liquors, and alimentary substances whatsoever that are colored by the aid of the above-mentioned substances.

It is also prohibited to use as wrappers for alimentary substances any paper colored by means of these coloring matters, or to have for sale alimentary substances thus enveloped.

ART. 2. Manufacturers and dealers will be rendered personally responsible for all accidents that may result from the use of alimentary products colored with the substances mentioned in article first of the present order, or from alimentary products wrapped in paper colored by the above-mentioned substances.

ART. 3. Annual visits will be made to manufacturers and retail dealers to ascertain if the conditions prescribed by the present decree are observed.

ART. 4. All contraventions will be punished according to law before the proper court.

ART. 5. The present decree shall be printed and publicly posted.

The mayors, commissioners of police, and inspectors of market places and markets are charged with its execution.

Made at Bordeaux, April 11, 1885.

E. SCHNERB,  
Prefect.

**Exports of grain from India.**—Consul-General B. F. Bonham, of Calcutta, writes as follows under date of July 20, 1886 :

Quantities of grain shipped for export during the years 1884 and 1885 from Calcutta and Rangoon :

*Grain other than rice.*

Years.	Grain.	Wheat.	Pulse.	Oats.	Beans.	Other sorts.
1884.	<i>Owt.</i>	<i>Owt.</i>	<i>Owt.</i>	<i>Owt.</i>	<i>Owt.</i>	<i>Owt.</i>
Calcutta .....	85, 203	2, 561, 677	448, 157	62, 791		26, 432
Rangoon .....	27, 780				13, 780	
1885.						
Calcutta .....	84, 168	4, 189, 531	175, 342	73, 516		995
Rangoon .....	32, 920				203, 080	

The quantities of rice shipped for export during the same time (1884 and 1885) from Calcutta, Chittagong, Rangoon, Bassein, and Akyab. You will observe that I have added to the following table a statement of the amount of rice exported in 1884 and 1885 at Maulmain and Madras also, thinking that the latter ports might have been inadvertently omitted from your inquiry.

*Rice.*

Ports.	1884.		1885.	
	Rice in the husk.	Rice not in the husk.	Rice in the husk.	Rice not in the husk.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Calcutta .....	1, 362	247, 653	891	276, 889
Chittagong .....	11, 405	22, 800	17, 752	32, 589
Rangoon .....		492, 865		546, 940
Bassein .....		117, 858		153, 154
Akyab .....		111, 076		153, 371
Maulmain .....		44, 106		56, 248
Madras .....		3, 495		945

**Grain exports from New South Wales.**—Consul G. W. Griffin, of Sydney, writes as follows, under date of June 24, 1886 :

It will be seen from this return that the colony exported during the year 1885 only 8,745 bushels of barley against 19,932 bushels for the year previous. The largest export of grain consists in maize (Indian corn), for the growth of which the soil and climate are extremely favorable. The export of this article during 1885 amounted to 399,526 bushels, valued at \$358,325, against 216,956 bushels, valued at \$256,795, for the year 1884. The yield of maize in New South Wales for 1884 was 4,235,163 bushels against 2,989,585 for the year 1885. The wheat harvest, however, showed a marked decline in 1886. The total yield for that year was 2,768,330 bushels against 4,263,394 for 1885. New South Wales, however, does not produce a sufficient quantity of wheat for home consumption, and while the customs returns for 1884 and 1885 show an export of 51,351 for the former year and 47,647 bushels for the latter, it must be understood that this wheat was imported from the adjacent colonies, and only sent here for transshipment to Melbourne or Adelaide. The export of oats during the year 1885 was 139,517 bushels against 189,533 for 1884.

The yield of the harvest for the present year was 279,107 bushels against 425,920 bushels for 1885, showing a decline of 146,813 bushels for 1886.

*Quantity and value of each kind of grain exported from the colony of New South Wales during the years 1884 and 1885.*

Years.	Barley.		Maize.		Oats.		Wheat.	
	<i>Bushels.</i>	<i>Value.</i>	<i>Bushels.</i>	<i>Value.</i>	<i>Bushels.</i>	<i>Value.</i>	<i>Bushels.</i>	<i>Value.</i>
1884 .....	19, 932	\$15, 480	216, 956	\$256, 795	189, 533	\$141, 895	51, 351	\$50, 965
1885 .....	8, 745	6, 490	399, 526	358, 325	139, 517	88, 470	47, 647	42, 700

**Exports of sugar from Barbadoes.**—Consul L. G. Reed, of Barbadoes, writes as follows, under date of September 7, 1886:

The following report shows the amount of sugar and molasses exported from this island to date, for the years 1885 and 1886, viz:

Destination.	1885.		1886.	
	Sugar.	Molasses.	Sugar.	Molasses.
	<i>Hhds.</i>	<i>Puncheons.</i>	<i>Hhds.</i>	<i>Puncheons.</i>
United Kingdom.....	31,212	1,827	17,502	.....
United States.....	28,135	8,997	20,050	5,981
British Provinces.....	4,231	26,419	1,001	25,967
	63,578	37,243	38,553	31,984

A decrease from 1885 of 25,025 hogsheads sugar, and 5,295 puncheons molasses. There are about 5,000 hogsheads of sugar remaining on the island.

The prospects for crop of 1887 are at this time remarkably fine, and calculations are made for a large production.

**Agricultural population of Belgium in 1846 and 1885.**—The following statistics are extracted from *Annuaire Statistique de la Belgique*, 1885:

## 1846.

Provinces.	Members of the family habitually engaged in agriculture.			Servants on wages, or day laborers.			Total.	Number of women to 100 workers.
	Men.	Women.	Total.	Men.	Women.	Total.		
Anvers.....	46,495	89,080	85,575	10,850	9,655	20,505	106,080	45.95
Brabant.....	89,481	89,958	159,439	13,457	10,626	24,083	183,522	43.91
Flanders (West).....	74,488	41,701	116,139	21,888	11,641	33,529	149,668	35.64
Flanders (East).....	103,881	59,720	163,601	26,177	13,783	39,960	203,561	36.11
Hainaut.....	88,616	50,020	138,636	12,403	6,032	18,435	157,071	35.69
Liège.....	37,261	25,854	63,115	7,264	5,911	13,175	76,290	41.64
Limburg.....	35,201	21,545	56,746	6,758	5,654	12,412	69,158	39.33
Luxemburg.....	36,754	26,205	62,959	3,231	3,347	6,578	69,537	42.50
Namur.....	38,440	21,925	60,365	5,275	3,074	8,349	68,714	36.38
Total.....	550,567	356,008	906,575	107,303	69,723	177,026	1,083,601	39.29

## 1885.

Provinces.	Members of the family habitually engaged in agriculture.			Servants on wages or day laborers.		
	Men.	Women.	Total.	Men.	Women.	Total.
Anvers.....	52,780	45,888	98,668	12,302	7,286	19,588
Brabant.....	86,284	81,248	167,532	21,150	10,215	31,365
Flanders (West).....	79,424	58,017	137,441	28,147	15,186	43,333
Flanders (East).....	114,426	86,539	200,965	28,954	14,781	43,735
Hainaut.....	59,817	54,084	113,901	16,433	8,544	24,977
Liège.....	30,868	32,452	63,320	10,093	6,145	16,238
Limburg.....	37,104	31,119	68,223	9,490	5,152	14,642
Luxemburg.....	39,481	36,513	75,994	5,334	3,419	8,753
Namur.....	29,489	26,591	56,080	9,859	4,705	14,564
Total.....	529,673	452,451	982,124	141,762	75,438	217,196

1885—Continued.

Provinces.	General total.	Proportion of total population.	Number of workers for each 100 hectares cultivated.	Number of workers to every 100 hectares.			Number of women to 100 workers.
				Members of family.	Hired labor.	Total.	
Anvers .....	118,256	20.48	132	63	13	76	44.97
Brabant .....	198,897	20.18	136	62	11	73	45.90
Flanders (West) .....	180,774	28.13	155	49	15	64	40.50
Flanders (East) .....	244,700	27.74	103	80	17	97	41.41
Hainaut .....	138,878	14.20	211	38	8	46	45.10
Liège .....	79,558	11.93	237	34	8	42	48.51
Limburg .....	82,865	39.30	162	51	11	62	43.77
Luxemburg .....	84,747	40.52	210	43	5	48	47.13
Namur .....	70,644	21.89	322	25	6	31	44.30
Total .....	1,199,319	21.77	165	49	11	60	44.02

**Agricultural statistics of Ireland for 1886.**—I have the honor to submit the annual general abstracts, which give, by counties and provinces, the acreage under crops, and the number and description of live stock in 1886.

The materials necessary for the compilation of the statistics were obtained by members of the Royal Irish constabulary and metropolitan police, who discharged this important duty with zeal and efficiency.

The abstracts have been carefully compiled from summaries made by the enumerators, and may in some slight degree differ from the revised figures which will be subsequently published.

The following table shows, by provinces, the total extent under crops, grass, fallow, woods, and plantations, and bog and marsh, barren mountain land, water, roads, fences, &c., in 1885 and 1886.

The total extent under crops (including meadow and clover) in 1886 is 5,033,846 acres, being an increase on the extent in 1885 of 76,719 acres, or 1.5 per cent. The increase in Leinster was 28,879 acres, or 2.1 per cent.; in Munster, 21,377 acres, or 1.7 per cent.; in Ulster, 24,341 acres, or 1.4 per cent.; and in Connaught, 2,122 acres, or .3 per cent.

In 1885 the extent returned under grass was 10,251,120 acres, in 1886 the amount returned is 10,160,292 acres, being a decrease of 90,828 acres; the extent returned as fallow in 1885 was 19,112 acres, and in 1886, 17,037 acres; the extent under woods and plantations in 1885 was 329,447 acres, against 329,548 acres in 1886; and the extent returned under "bog and marsh, barren mountain land, &c.," in 1885 was 4,771,947 acres, against 4,788,030 acres in 1886, being an increase of 16,083 acres; of the acreage thus returned in 1886 1,708,479 acres have been entered by the enumerators as bog and marsh, and 2,229,369 acres as barren mountain land.

Provinces.	Year.	Total extent under crops (including meadow and clover).	Grass.	Fallow.	Woods and plantations.	Bog and marsh, barren mountain land, water, roads, fences, &c.*	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Leinster.....	1885	1,357,288	2,657,903	4,377	101,748	717,194	4,838,510
	1886	1,386,167	2,622,781	4,036	103,226	722,300	
Munster.....	1885	1,230,725	3,282,015	4,927	111,233	1,805,782	5,934,682
	1886	1,252,102	3,252,235	4,750	108,763	1,316,832	
Ulster.....	1885	1,683,300	2,293,809	4,497	62,492	1,278,223	5,322,321
	1886	1,707,641	2,269,792	4,258	62,536	1,278,094	
Connaught.....	1885	685,814	2,017,393	5,311	53,974	1,470,748	4,233,240
	1886	687,936	2,015,484	3,993	55,023	1,470,804	
Total.....	1885	4,957,127	10,251,120	19,112	329,447	4,771,947	120,328,753
	1886	5,033,846	10,160,292	17,037	329,548	4,788,030	

\* Including 133,035 acres under water.

† Exclusive of 494,726 acres under the larger rivers, lakes, and tideways.

#### TOTAL EXTENT UNDER CROPS.

The extent of land under tillage in 1885 was 2,922,359 acres; in 1886 it is 2,939,708 acres, being an increase of 17,349 acres. In Ulster the increase amounted to 10,631 acres, in Leinster to 4,402 acres, and in Munster to 5,782 acres; while there was a decrease in Connaught of 3,466 acres.

*Cereal crops.*—Compared with 1885 there appears a *decrease* of 2,609 acres in the acreage under wheat, of 5,664 acres in oats, and of 445 acres in beans and peas; while there is an *increase* of 2,361 acres under barley, and of 2,121 acres under bere and rye; showing a total *decrease* of 4,236 acres in the extent under cereal crops.

*Green crops.*—The acreage under potatoes has *increased* by 2,566 acres, turnips by 2,289 acres, and mangel wurzel by 234 acres. The extent under cabbage *decreased* by 2,050 acres; carrots, parsnips, and other green crops by 507 acres, and vetches and rape by 665 acres; leaving a net *increase* of 1,867 acres in the extent under green crops.

*Flax.*—The acreage under flax in 1885 was 103,147 acres, and in 1886 the extent returned under this crop is 127,865 acres, being an *increase* of 19,718 acres.

In 1885 there were 2,034,763 acres returned under meadow and clover; in 1886 the extent returned under this crop is 2,094,138 acres, being an *increase* of 59,370 acres.

The following statements show the acreage under each crop in 1885 and 1886, respectively, with the increase or decrease in the latter year:

*Cereal crops.*

Crops.	1885.	1886.	Increase in 1886.	Decrease in 1886.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Wheat .....	71,017	68,408	.....	2,609
Oats .....	1,328,869	1,323,205	.....	5,664
Barley .....	179,133	181,494	2,361	.....
Bere and rye .....	8,743	10,864	2,121	.....
Beans and peas .....	7,141	6,696	.....	445
Total .....	1,594,903	1,590,667	.....	4,236

*Green crops.*

Potatoes .....	797,292	799,858	2,566	.....
Turnips .....	296,984	299,273	2,289	.....
Mangel wurzel and beet root .....	37,179	37,413	234	.....
Cabbage .....	42,127	40,077	.....	2,050
Carrots, parsnips, and other green crops .....	31,309	30,802	.....	507
Vetches and rape .....	14,418	13,753	.....	665
Total .....	1,219,309	1,221,176	1,867	.....

*General summary of cereals, green crops, &c.*

Cereal crops .....	1,594,903	1,590,667	.....	4,236
Green crops .....	1,219,309	1,221,176	1,867	.....
Flax .....	108,147	127,865	19,718	.....
Total under tillage .....	2,922,359	2,939,708	17,349	.....
Meadow and clover .....	2,034,768	2,094,138	59,370	.....

Total increase in the total extent of land under crops in 1886, 76,719 acres.

*Table showing the area under the several crops in each year from 1882 to 1886, inclusive.*

Crops.	1882.	1883.	1884.	1885.	1886.
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Wheat .....	152,824	94,740	67,690	71,017	68,408
Oats .....	1,397,307	1,381,904	1,348,444	1,328,869	1,323,205
Barley .....	167,254	183,291	167,061	179,133	181,494
Bere and rye .....	8,136	7,586	7,495	8,743	10,864
Beans and peas .....	11,216	11,190	8,729	7,141	6,696
Potatoes .....	837,018	806,467	798,952	797,292	799,858
Turnips .....	294,070	306,799	304,031	296,984	299,273
Mangel wurzel and beet root .....	36,316	37,945	34,541	37,179	37,413
Cabbage .....	36,840	35,813	39,473	42,127	40,077
Carrots, parsnips, and other green crops .....	30,666	20,866	31,021	31,309	30,802
Vetches and rape .....	13,153	13,393	13,395	14,418	13,753
Flax .....	113,484	95,943	89,225	108,147	127,865
Total under tillage .....	3,119,184	3,004,917	2,910,257	2,922,359	2,939,708
Meadow and clover .....	1,962,152	1,931,784	1,962,487	2,034,768	2,094,138
Total extent under crops .....	5,081,336	4,936,701	4,872,744	4,957,127	5,033,846

## RETURN OF LIVE STOCK.

It appears from the following table that between 1885 and 1886 there has been an *increase* in the number of horses and mules amounting to 1,920; whilst there has been a *decrease* in the number of cattle amounting to 44,824, of sheep amounting to 110,334, and of pigs amounting to 5,959. Of the 13,910,663 poultry enumerated in 1886, 815,198 were turkeys, 2,062,781 were geese, 2,856,951 were ducks, and 8,175,733 were ordinary fowl.

*Table showing the number of live stock in each year from 1877 to 1886, inclusive.*

Years.	Horses and mules.	Asses.	Cattle.	Sheep.	Pigs.	Goats.	Poultry.
1877 .....	575,498	185,842	3,997,598	3,987,609	1,468,712	287,297	13,566,063
1878 .....	566,415	185,464	3,965,120	4,095,134	1,269,399	278,874	13,711,174
1879 .....	596,890	186,839	4,067,778	4,017,903	1,072,185	278,843	13,782,835
1880 .....	582,130	185,327	3,921,517	3,562,463	850,269	285,789	13,430,182
1881 .....	574,746	187,143	3,958,595	3,256,185	1,095,830	266,078	13,972,426
1882 .....	565,925	187,782	3,987,211	3,071,755	1,430,128	263,272	13,999,006
1883 .....	561,427	189,760	4,096,953	3,219,811	1,348,364	263,146	13,382,430
1884 .....	562,439	191,339	4,112,789	3,245,212	1,306,550	254,411	12,747,460
1885 .....	576,430	197,170	4,228,851	3,478,056	1,269,092	264,437	13,850,532
1886 .....	578,350*	196,263	4,184,027	3,367,722	1,263,133	266,135	13,910,663
Difference in numbers between 1885 and 1886 .....	<i>Increase.</i> 1,920	<i>Decrease.</i> 907	<i>Decrease.</i> 44,824	<i>Decrease.</i> 110,334	<i>Decrease.</i> 5,959	<i>Increase.</i> 1,698	<i>Increase.</i> 60,131

*Scutching mills.*—In connection with the area under flax, I beg to state that the number of scutching mills enumerated in 1886 is as follows: In the province of Ulster, 1,033; Munster, 8; Leinster, 7; and Connaught, 6; making a total of 1,054 for Ireland.

THOMAS W. GRIMSHAW,  
*Registrar-General.*

GENERAL REGISTER OFFICE, CHARLEMONT HOUSE,  
*Dublin, August 12, 1886.*

**Crops of Spain.**—Consul Darius H. Ingraham, of Cadiz, writes as follows, under date of September 1, 1886:

The grain crop has been abundant and of good quality, as it was also last year, thus making two good years for grain.

The olive crop in the province of Seville, which is gathered in November, is very promising, and prices keep low on that account.

Respecting the grape, principally Jerez, the yield will be fair, but by no means so extraordinary as that of last year, which was one of the most abundant ever known. The grapes were larger than this year's, and contained more liquid. They are gathered the last of September, and will prove of good quality.

The quantity of salt made this year in this vicinity has been extraordinary, owing to the prevalence of the dry east wind called Levante. I am informed by Hon. A. J. Bensusan, president of the Salt Growers' Association, that up to last Saturday, August 28, the crop had already in amount equaled the whole of last year's, which was a good average one, and which was about 101,000 lasts (2½ tons, or 68 bushels, to the last).

The season for making salt usually ends with the first rainfall, or about September 20.

Last year, however, rain fell on August 29, the pans were recleaned, and the process of evaporation was continued till September 25, when the rainy season set in.

UNITED STATES CONSULAR REPORTS.

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES

ON THE

COMMERCE, MANUFACTURES, ETC.,

OF THEIR

CONSULAR DISTRICTS.

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No. 71.—November, 1886.

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PUBLISHED BY THE DEPARTMENT OF STATE, ACCORDING TO ACT OF CONGRESS.

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WASHINGTON:  
GOVERNMENT PRINTING OFFICE.

1886.



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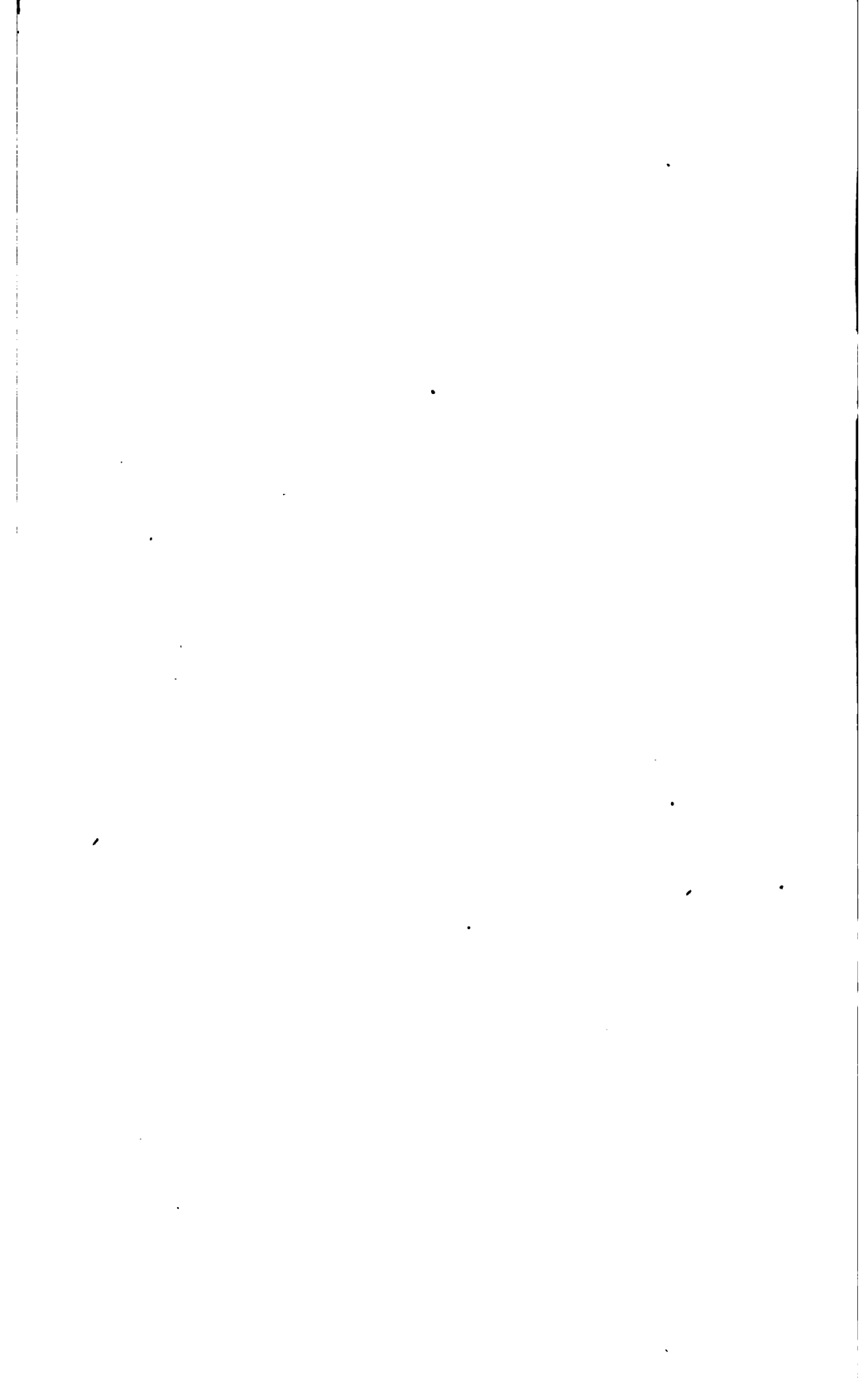
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**CONSULAR REPORTS**  
**ON**  
**COMMERCE, MANUFACTURES, ETC.**

No. 71.--NOVEMBER, 1886.

**THE ELEMENTS OF COST OF CERTAIN ARTICLES MANUFACTURED  
OR PRODUCED WITHIN THE LEITH CONSULAR DISTRICT.**

*REPORT OF CONSUL MALMROS.*

In response to circular of the Department dated July 15, 1885, directing further inquiries to be made to ascertain the cost of labor in certain commodities, I submit the following report on the elements of cost of such articles as are to any extent produced in this consular district. My information on the subject, which is derived from excellent sources, may be considered trustworthy, and is stated in as succinct & form as practicable. The articles reported on are the products of woolen mills (reports from 2 mills), paper mill (report from 1 mill), coal mines (one report), and agriculture (two reports).

**WOOLEN MILL NO. 1 (SOUTH OF SCOTLAND).**

This is a first-class yarn or spinning mill, as well as a cloth or weaving mill, the cloth consisting almost exclusively of tweeds, other articles being produced occasionally only, and then in such limited quantities as not to be deserving of special mention.

The spinning and carding mill is a freestone building, partly of one and partly of three stories lighted from the roof, the ground floor being on the same level as the adjoining land. The principal room, which measures 250 by 300 feet, contains the carding machinery, the spinning department being confined to a three story building. The carding mill, being of one story only (known locally as a "shed"), contains no stairs. The floor is of Baltic timber, and the roof is supported upon iron pillars 27 feet apart, the main beams being crossed by lighter beams which carry the roof, and the shafting being supported upon iron pillars. The ventilation is by revolving cowls. The building is heated by steam and lighted by gas. Buildings of this description (viz, "sheds") are the most economical both as to cost of construction and of the work performed in them in the manufacture of either yarn or cloth. On account of their abundant light, perfect ventilation, and the extensive use of pure

olive oil, and the absence of dust the sanitary condition of these buildings is excellent. The building of three stories, which contains the spinning machinery, is attached to and communicates with that above described. The first and second floors are necessarily lighted from the sides, and the internal communication is by a stone-staircase; the wood of the floors is all of 1½-inch Baltic pine; the floors are supported by iron columns at a distance of 17 feet apart.

The weaving mill is a shed-roofed building, extending 190 by 220 feet, with every two rows of looms driven from a center shaft, right and left. It is all lighted from the roof, and ventilated by Archimedean-screw ventilators. One tuner or tenter is required for every twenty looms; being all on the basement floor it is easily worked, and the machinery stands more solid, thereby producing more perfect work.

The whole buildings may be described with approximate accuracy as a quadrilateral figure, inclosing an open court, the area actually covered by buildings, being one and a half acres, which at an annual value of £50 per acre, calculated upon twenty-five years' purchase, gives £1,875 (\$9,124.68) as the value of the ground upon which the buildings are erected. Of the above area the spinning mill occupies as nearly as possible five-eighths, and the cloth mill seven-eighths of an acre, their respective values being £6,000 (\$29,199) and £8,000 (\$38,932). The total value of the ground and buildings is thus £15,875 (\$77,255.68).

Buildings forming part of the figure are the engine-house, boiler-room, and the rooms containing the wool-washing and drying machinery. The floor surface in actual use is 24,997 square feet, and the cost may be stated at 23s. per square yard, equal to 2s. 6½d. per square foot. The machinery used throughout the buildings consists of the following: One self-acting wool-scouring machine (McNaught's patent, Rochdale), eight dye-pots for wool and six for yarn, all heated either by steam or by furnaces, and two indigo vats. In the finishing department there are five cropping-machines; one 44 inches wide and the others 72 inches, two steaming and brushing machines, one raising-machine, one tenting or drying machine, known as "Petrie's Patent," one hydro-extractor, six pairs of milling and scouring machines combined, three sets of treble scouring-machines, one squeezing-roller, and five hydraulic presses. The carding machinery consists of eleven sets, each set consisting of three machines with one main cylinder in each, the width being 72 inches. There are sixteen self-acting mules or spinning-jennies and ten twisting-frames. The total number of spindles is fifteen thousand, and of looms there are a hundred and eighty-six patent power-looms, manufactured either by Schofield & Kirk, Huddersfield, or Platt Brothers & Co., Oldham, and thirty hand-looms. These power-looms are technically known as "eleven-quarter" looms, being equivalent to a width of 99 inches. The present value of the spinning machinery may be stated at £30,000 (\$145,995), and of the weaving machinery at £18,000 (\$87,597), the total being £48,000 (\$233,592), in each of which sums is included proportions of the cost of boilers, engines, and such machinery as is common to both. The machinery is propelled entirely by steam-power, the horse-power capacity of the machinery applicable to the spinning mill being 280, and to the weaving 110. Coal, which is brought by rail a distance of 40 miles, costs 12s. per ton delivered, and the price of gas is 3s. 6½d. per 1,000 feet. The local and imperial taxes amount to 5s. per pound on the valuation of the mill buildings, and the amount paid for fire insurance premiums is £250 (\$1,216.62) per annum. The annual depreciation of machinery is estimated by manufacturers as amounting to 2½ per cent.; the British Government, however, for taxing purposes, allows for such

a depreciation an annual reduction of 5 per cent. in the valuation of the machinery referred to.

With reference to the return upon capital invested I submit an illustrative case. Placing the capital in the business at £40,000 (\$194,660) and calculating that this is turned over five times a year, the annual turn over would be £200,000 (\$973,300), which, at 2½ per cent., would yield a profit of £5,000 (\$24,332.50) per annum, which is equivalent to a profit of 12½ per cent. upon the capital actually invested. The average weekly production of finished goods (tweed cloth) is 400 pieces of 45 yards each, equal to 18,000 yards per week, or 936,000 yards per annum, the value of which may be stated at £156,000 (\$759,174). For the production of this quantity of goods eleven sets of carding-engines are necessary.

Employment is afforded to 600 operatives, male and female, including qualified children. The working hours for men and women average in this mill 56½ hours per week; those of children (under thirteen years old) 28½ hours, this being in each case full time. The total weekly wages paid average £535 (\$2,603.57). Wages paid children working full time, 5s. 6d. (\$1.33) to 6s. (\$1.46); half time, 4s. (97 cents). Young girls of the age of fifteen or sixteen, employed as winders, 9s. (\$2.19) and 14s. (\$3.40), according to the nature of their work; employed as power-loom tuners, 15s. (\$3.65); power-loom weavers (women), 17s. (\$4.13); birlers, 14s. (\$3.40); and darners (women), 19s. (\$4.62); loom tenters or power-loom tuners, £1 7s. 6d. (\$6.69); finishers, £1 6d. (\$4.98); foremen of departments, £1 12s. 6d. (\$7.90); spinners, £1 10d. (\$7.30); wool sorters, £1 5s. (\$6.08); gate-keepers, watchmen, and the like, 18s. (\$4.38); dyers, 18s. (\$4.38); enginemmen, £1 5s. (\$6.08).

A set of carding-machines ready for working costs £1,800 (\$8,759.70), those used throughout this district being the most recent improvements of Tatham, of Rochdale, or Platt, of Oldham.

The power-loomers principally used are those of Platt, of Oldham, or Schofield & Kirk, of Huddersfield, but, whoever may be the maker, the cost may be stated at £50 (\$243.32) per loom.

The wool used in the district is either Scotch cheviot, costing 10 pence per pound, or Australian, Cape, or River Plate wool, averaging 1s. 6d. (36 cents) per pound, clean.

A pound of greasy wool produces one pound of greasy yarn, and this when scoured realizes 75 per cent. of its weight.

There is no import duty upon wool.

The average length of credit given to merchants is three months.

The average rate of interest on real estate is 3½ per cent. per annum.

The rates of discount and interest on banking transactions average as follows:

	Per cent.
Bank of England, minimum.....	3
Discount on London bills:	
Not exceeding 2 months, or 65 days .....	2½
Not exceeding 3 months, or 95 days .....	3½
Not exceeding 4 months, or 125 days .....	4
Exceeding 4 months, or 125 days .....	4
Discount on local and country bills:	
Not exceeding 2 months, or 65 days .....	3
Not exceeding 3 months, or 95 days .....	4
Not exceeding 4 months, or 125 days .....	4½
Exceeding 4 months, or 125 days .....	4½
Interest on advances on cash accounts .....	5
Interest on overdrafts .....	5½
Interest on money lodged on deposit receipts .....	2
Interest on minimum monthly balance.....	1½



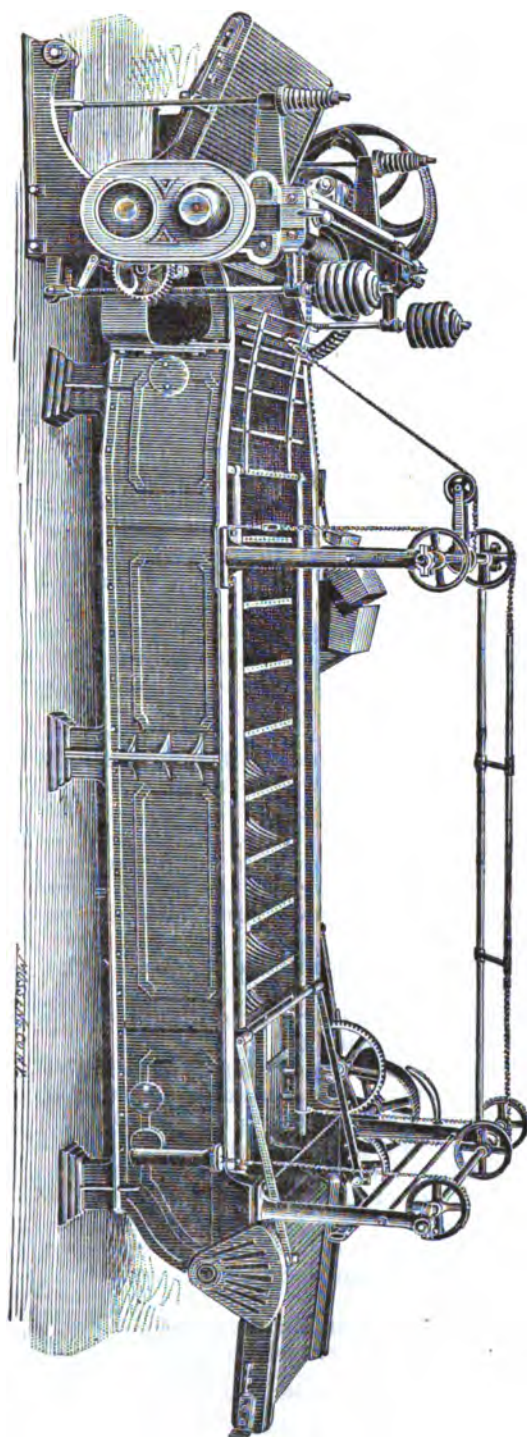
The following example fairly represents the income and expenses of a weaver. He is married and has two children aged six and eight years, respectively. He occupies a house consisting of two rooms, of which he is tenant. His weekly wages (56½ hours) are 20 shillings (\$4.8665), equal to £52 (\$253.05) a year. His wife and children do not work.

Income .....	\$253 05
His expenses are:	
1. House rent .....	\$29 20
2. Taxes:	
Municipal .....	\$4 01
Poor .....	49
	4 50
3. Seat rents in church .....	4 54
4. Coal and gas .....	17 52
5. Provisions:	
Butcher meat, per week, 5 pounds .....	\$1 00
Bread, per week, 7 4-pound loaves .....	71
Butter, per week, 1 pound .....	24
Tea, per week, ½ pound, at 2s. 6d .....	15
Coffee, per week, 1 pound .....	30
Milk, per week .....	24
Vegetables, per week .....	12
Total, per week .....	2 76
Equal to, per annum (or 69 cents each person) .....	145 83
6. Clothing:	
4 pairs boots, man, \$4.38; wife, \$2.20; children, \$1.46 each ...	\$9 50
Slippers and repairs .....	1 82
Body clothes, man .....	10 95
Wife .....	9 73
Children .....	9 73
	41 73
7. Medical attendance .....	3 65
8. Sundry outlays .....	6 08
Total .....	253 05

The following authentic statement shows the cost of the labor and the other expenses entering into the manufacture of the two classes of goods which are the principal product of the woollen mills of the district. I take the case of a woollen cassimere weighing 16 ounces to the yard and measuring 28 inches in width:

Items.	Cheviot wool	Botany, Cape, or River Plate wool
	s. d.	s. d.
Cost of wool, raw .....	0 10	0 18
Cost of wool in the cloth .....	1 4	2 0
Cost of dyestuffs, &c. ....	0 4	0 6
Cost of labor .....	0 3	0 4
Insurance and taxes .....	0 1	0 1
General expenses, including cost of distribution .....	0 4	0 6

I subjoin herewith description, diagram, and price-list of McNaught's new patent wool-washing-machine used in this mill.



McNaught's new patent wool washing machine. (Single machine.)

## WOOLEN MILL NO. 2 (SOUTH SCOTLAND).

This mill, although much smaller than the one above described, is excellent in all its appointments. It confines its operations to the manufacture of Scotch tweeds and to the spinning of the yarn required for its own production of that kind of cloth.

The area of land occupied by the mill buildings is 132,030 square feet; cost of land 1 penny per square foot, and the cost of buildings £6,350 (\$30,902.27).

The area of floor surface is 63,000 square feet, and costs 2 shillings per square foot.

There is employed in this mill every kind of machine used in the manufacture of Scotch tweeds, viz:

*Wool-scouring machines.*—A hand-scouring machine is used, as the output is not large, and the wool is freer when scoured in this way. Machine scouring is slightly cheaper, and is in vogue in large works, and in that case a machine suited to the size of production is better than hand scouring, but care is necessary.

*Dye boilers and all the other apparatus connected with dyeing.*—There are three boilers in the dye-house, one circular boiler for wool and two square boilers for yarn. Fire is used for heating purposes. (In the Scotch trade, where permanence of color and exactness of shade are of the first importance, a good deal more depends on the dyer than on the dye-house).

*Carding engines.*—There are three sets of carding engines used with self-feeding and balling machinery. The balling machine was invented by Platt Brothers, limited, of Oldham. It takes the "sliver" of the carding machine, making it ready for the "condenser." Those three sets of carding engines are of five cylinders each and single doffers, the wool used being of a fine quality. Double doffers are only employed where cheviots or cross-bred wool is used. There are also employed the shake, willey, and picker teaser. The cockspur teaser is required for coarse long wools only. With reference to speed of running it is impossible to give details, as it varies so much, according to the trade.

Klein's improved carding engines are in use only on the continent of Europe, where wools of a more burry class are used than in tweed manufacture.\*

The carding engines in this mill are 60 inches wide.

*Spinning mules.*—Four pairs of self-acting mules, holding 2,360 spindles in all (or 590 spindles on each pair of mules); one pair of hand-mules, 540 spindles; total, 2,900 spindles.

*Twisting machines.*—The firm owning this mill prefer to twist in the ordinary self-acting mule. (Some makers use twisting machines made either by Sykes or by Platt Brothers, limited, Oldham.)

*Looms.*—There are thirty-six power looms and twelve hand looms employed in this mill. (In all cases four-boxed looms only are put in. Platt Brothers, limited, of Oldham, make the best loom for the Scotch trade. Our looms made by that firm cost £55 (\$267.65) each. Schofield & Kirk, of Huddersfield, come next. Very seldom more than twelve shafts are used, but they can work up to twenty or twenty-four, as ordered.)

*Harnesses.*—The number of harnesses employed with each loom is any number up to twenty-four, and the width of same is 90 inches.

\*An illustration of this carding engine will be found in Consular Report No. 66 August, 1886, p. 288.

Besides the above there are in use reeling, winding, and warping machines, burring and oiling machinery, piece-scouring and milling machines, hydro-extractor and tentering machines, damping, brushing, and shearing machines, steam oven and hydraulic presses.

The present cost price or value of all the machinery employed in the mill under notice, including boilers, engines, shafting, tools, &c., is £7,150 (\$34,795.47).

Steam and water power combined are used to run this mill, and the capacity of same is 80 horse-power.

The cost price of coal delivered at the factory is 10s. (\$2.43) per ton on an average.

The amount annually paid for taxes upon land, buildings, machinery, and power employed for manufacturing purposes averages £60 (\$292).

Other expenses entering into the cost of production are £70 (\$340.65), paid annually for insurance; also, a deduction of 10 per cent. from machinery account, and 5 per cent. from buildings account per annum.

The return on capital invested which the proprietors in this instance regard as satisfactory is 8 to 10 per cent.

The total weekly production at this mill is 6,000 yards medium quality Scotch tweed, 28 inches wide, the ordinary summer weight of the cloth being 8 to 10 ounces, and its ordinary winter weight being 14 to 16 ounces per yard. In each of these cases the same value is turned out. The value of those 6,000 yards is £750 (\$3,649.87).

The total number of persons employed in and about this mill, exclusive of administration, is 116 persons.

Employés are required to work fifty-six hours per week, and the total average amount of weekly wages paid to them is £80 (\$389.32). The weekly rate of wages paid in different departments of labor is as follows:

Departments of labor.	Average wages paid per week.		
	Men.	Women.	Children.
Wool sorting (in the Scotch manufacturing trade wool is usually bought sorted) .....			
Carding:			
Overseer* .....	\$7 30		
Second hand* .....	5 11		
Common hands .....	4 38		
Spinning:			
Overseer, who also fixes .....	6 08		
Spinners, work by piece and earn about .....	6 08		
Common hands (boys) .....			\$2 43
Weaving:			
Overseer .....	7 30		
Weavers, known as power-loom tenters, piece-work, say .....		\$3 65	
Weavers, hand-loom, usually for patterns, piece-work, say .....	7 30		
Finishing:			
Overseer .....	7 30		
Second hand .....	5 11		
Scourers and fullers .....	5 11		
Shearers .....	4 38		
Pressers .....	4 38		
Dyers:			
Overseer .....	8 51		
Common hands, known as slushers .....	4 38		
Repair hands:			
Blacksmiths .....	6 08		
Carpenter .....	6 08		
Birling (comes between weaving and finishing):			
Knotters .....		2 92	
Darners, piece-work, say .....		3 89	
Watchman .....	4 38		
Engineman .....	7 30		

\* These always grind.

Of the looms employed in this mill those from Schofield & Kirk, Huddersfield, cost each £45 (\$219), and those from Platt Brothers, Oldham, £55 (\$267.65).

Australian and New Zealand wools are the material used in this mill in the manufacture of tweed cloth, at the average cost price, per clean pound weight, of 1 shilling and 10 pence.

One pound of clean wool produces, on an average, 13 ounces of cloth.

No duties are paid in Great Britain on imported wool.

The average length of credit given to purchasers of goods at this mill is six months.

The prevailing rate of interest paid by entirely responsible manufacturers in this district is  $4\frac{1}{2}$  per cent.

The quantity capable of being produced by the machinery manufactured by the several firms above mentioned cannot be accurately stated, because as much depends upon the quality of the workmen as on the machinery, and, also, because much depends upon the quality of the goods intended to be produced. If a low grade of goods is wanted, the main object must be to produce the greatest quantity possible in the shortest time. If, on the contrary, a high grade of goods is required, the quantity produced within a given time becomes a matter of secondary importance as compared with perfect work.

#### PAPER MILL.

The area of land occupied by this paper mill is  $1\frac{1}{2}$  acres. The value of the buildings upon it occupied for manufacturing purposes is estimated at £30,000 (\$145,995).

The kinds and qualities of paper principally made in this mill are finest writing and account book superfine printings, and cheaper writings, such as are made on the continent of Europe.

The following are the machines in use: (1) In rag-house, American rag-cutter, British willow and dusters; (2) in breaker-house, ordinary washing-engine; (3) in beater-house, ordinary beating-engine; all driven by power.

There are 26 beater-engines employed, having a capacity ranging from 150 to 400 pounds of paper, and one of 1,100 pounds.

There are 4 boilers used for rags and 4 for esparto, all high pressure.

Five paper-making machines are employed, making from 59 inches wide to 70 inches wide cut paper; value, £15,000 (\$72,997.50).

The appliances in use for finishing the paper are calenders full width of paper web, and sheet calenders or boarding calenders.

The mill is run by 75 horse-power water-power and 944 horse-power steam-power.

The average quantity of soda ash recovered is 18 tons weekly, or 45 per cent.

The present cost price or value of all the machinery employed in this mill, including boilers, engines, shafting, tools, &c., is £70,000 (\$340,655).

The cost price of coal averages 5s. (\$1.21) per ton, delivered at the mill.

The number of hands employed in this mill is 900 in all, of which there are 300 male and 600 female.

The amount annually paid for taxes upon land and the buildings or machinery used for manufacturing purposes is £500 (\$2,433.25). The amount annually paid for fire-insurance premiums is £350 (\$1,703.27).

The return on capital invested in this mill would not be considered satisfactory if less than 15 per cent.

The total quantity of paper manufactured averages annually 350,000 reams, having a total weight of 5,000 tons. Price ranges from £28 (\$136.26) per ton to £200 (\$973.30) per ton.

The total average amount of wages paid during the year is £28,000 (\$136,262).

The average length of credit given to purchasers of goods from this mill is three months.

In this manufacture the yield of each particular raw material is as follows: Rags yield 60 per cent. to 80 per cent. of their weight in paper; esparto yields 40 per cent. to 52 per cent., according to quality.

The cost price or value of the raw material is shown thus: Rags range from £13 (\$63.26) to £26 (\$126.53) per ton, and esparto from £5 10s. (\$26.76) to £7 10s. (\$36.50) per ton, delivered at the mill, at present prices, the variation depending on quality of the material.

#### COAL MINING IN THE COUNTIES OF MIDLOTHIAN, EAST LOTHIAN, AND WEST LOTHIAN.

The coal mines of the Lothians are from 200 to 1,000 feet in depth, sunk perpendicularly to the coal seams. From the bottom of these perpendicular shafts levels are driven at right angles to the lie of the coal.

The coals are worked by headings from the levels, and brought down by self-acting inclines or on slipes. The seams range in thickness from 2½ to 6 feet. The thinner seams are worked by a system known as "longwall" and the thicker ones by "stoop and roon." The greatest difficulty in working the coal is the angle at which it lies, ranging from 30° to 40°. The qualities of coals worked are first-class gas-coal, coals for domestic purposes, and steam coals.

The rents or royalties are about one-ninth part of the price obtained for the coals at the mine. These will amount to, for gas-coals, 48 to 60 cents per ton; house coals, 12 to 18 cents; and steam coals, 8 to 12 cents per ton.

The machinery generally erected for drawing the coals to the surface is of the horizontal class, coupled with winding drum on the driving shaft. The ropes used are of steel or iron wire.

For draining of the mines the engines most generally in use are of the direct-acting condensing class, with cylinder over the pumping space in the pit, the piston-rod of engine being attached to the end of the pump-rods. At one of the pits here 3,000 tons of water are raised daily from a depth of 960 feet.

The number of hours worked per day by the miners are eight, and the wages earned 4s. to 5s. (97 cents to \$1.21).

It is difficult to give an accurate idea of the kind and quantities of food used by the miners; but generally in the more provident households breakfast consists of tea or coffee and bread and butter; dinner, vegetable soup, with beef or mutton, and potatoes. Tea costs 60 cents per pound, coffee 36 cents, butter 28 cents, bread 3 cents, beef or mutton 20 to 24 cents per pound. Spirits or malt liquors as a general rule are not used regularly as articles of diet, although probably considerable quantities are used, but not in the miners' own homes.

The clothing worn by the men at work consists of a coarse flannel, their better clothes being mostly of Scotch-made tweed. The cost of clothing for a man for one year will amount to £5 (\$24.33) or £6 (\$29.20).

The total expenses weekly of a miner and his wife and three children average as follows:

Meat or fish .....	\$0 97
Dairy products and eggs .....	49
Bread and meal .....	85
Vegetables, including potatoes .....	36
Tea and coffee .....	36
Sugar or sirup .....	24
Sundries—spice, salt, &c. ....	04
Liquors .....	36
Medical attendance .....	04
Boots and shoes and clothing (£10, or \$48.66 per annum, on an average) weekly, say .....	94
Rent (£5 or \$24.33 per annum), per week .....	47
<b>Total .....</b>	<b>5 12</b>

The dwellings provided for the miners are two and three roomed cottages, built in rows, having a small garden plot at front or back of the cottage, the rents charged for them being usually £5 (\$24.33) a year.

The cost of producing 1 ton of coal is, for gas-coal, \$2.43; house coal, \$1.21; and steam coal 85 to 97 cents. This cost includes labor, furnishings, rents, taxes, and all other charges.

The wholesale price of coals at the pit mouth is, for gas coal, 21s. (\$5.11) per ton; house coal, 7s. 6d. (\$1.82) per ton; and steam coal 5s. 6d. (\$1.33) per ton.

The local taxes payable add but little to the cost of each ton of coal produced. They are exigible on the rental of the colliery, and amount to, say 40 to 48 cents per pound sterling (\$4.86) thereof, one-half of which is payable by the tenant, and the other half by the landlord or proprietor of the minerals.

The larger portion of the produce of the collieries in this district is used for home consumption, for gas-making, manufacturing purposes, and domestic use, within a radius of the collieries of 100 miles, the cost of transit being from 24 cents to \$1.46 per ton, according to distance. During the summer months considerable quantities are exported to the ports in the Baltic and north of Europe; the United States, France, and Spain being also buyers to some extent. The cost of transit and putting on board ship at the nearest shipping place averages 48 cents per ton.

#### PRODUCTS OF AGRICULTURE.

*Farm No. 1.*—The land of this farm is principally heavy clay of a bright color, growing all crops generally cultivated in Britain, but excelling in wheat, beans, &c. The lighter soils of same color near sea-coast are famed for their excellent crops of potatoes, carrots, &c.

The land is held by lease of nineteen years. Some leases contain a clause permitting tenant to quit at any time during currency of lease by giving two years' previous notice.

The customary rent of land worked under lease in East Lothian is: for pasture land, according to stock-carrying capabilities, from \$2.43 to \$3.65 per imperial acre; for arable land, \$4.86 to \$7.30 per imperial acre, in districts at some distance from railroads and markets, on to \$19.46, \$24.33, and even \$29.20 or more per imperial acre for good land, well situated in the neighborhood of towns.

Labor is plentiful and good, but high as compared with other countries, except the United States and British colonies; but during the past few years of agricultural depression wages have fallen more or less,

and on account of such depression many farm laborers are migrating to the towns. Both men and women are employed in field labor.

The tools used are good and substantial, but heavier than those used in the United States.

Machinery is much used, but several farms are cumbered with old machines, which should be replaced by others of more modern invention. Almost all farms are possessed of a thrashing mill driven by steam engine. Steam cultivating tackle is employed on some of the largest farms, and both thrashing mills and steam plowing tackle can be had for hire. The self-binder is being slowly introduced, but will probably soon be largely taken advantage of. Carts alone are made use of for all descriptions of farm work. No wagons are employed.

Including perquisites the yearly value of a farm servant's wages will amount to about \$220.20. Of this he receives so much in cash and the rest in "gains," such as free house and garden, keep of cow, oatmeal, potatoes, and sometimes wheat, barley, and other grain, which he can either sell or consume. The money is usually paid half-yearly, the men getting a small sum monthly to account if they require it. In districts near towns the system of paying wholly money wages has been introduced and is gaining ground, the laborers much preferring it. The following represents the wage of a married farm servant for one year:

Money .....	\$87 59
Allowance in place of cow's keep .....	29 20
Milk in lieu of right to keep a pig .....	9 49
Meal, 65 stones .....	31 63
Barley, 12 bushels .....	13 14
Beans, 4 bushels .....	5 11
Potatoes, 1 ton .....	17 03
Food in harvest .....	5 11
Coals, driven, 5 loads .....	7 30
House and garden .....	14 60
	<hr/>
	220 20

Or, say \$4.25 per week.

The laborer's wife is fully occupied with house work; she seldom does much farm work after marriage; children small, earn nothing.

The hours of labor are ten in summer and eight, or as long as there is daylight, in winter. In summer work in the field usually begins at 6 a. m. and continues till 11 a. m., when men and horses take two hours' rest. Then work begins again at 1 p. m. and goes on till 6 p. m. In winter the time of beginning and stopping work is regulated by the length of days and state of weather, and the midday interval is usually of one instead of two hours' duration.

The farm laborer's fare is plain, but wholesome. The following gives an idea of the food consumed by a farm servant and his wife and family of six during one week:

Meat, 1½ pounds .....	\$0 24
Fish .....	12
Dairy produce and eggs .....	66
Bread (five loaves) and flour .....	89
Tea and coffee .....	34
Sugar and sirup .....	12
Spices, salt, &c .....	20
	<hr/>
Total .....	2 57

Milk and potatoes are included in wages, and beyond produce of garden few vegetables are required.



The clothing of the farm laborer and his family is now much better than it was some years ago. Almost all are now respectably and comfortably clad. The yearly sum expended in clothing by the above farm laborer and his family is from \$29.20 to \$48.66.

As to shelter, it has been already shown that a house is usually given as part of the farm servant's wages. The houses as a rule are commodious and comfortable, and if let would command a rent of \$4.86 to \$19.46 per annum, according to accommodation, locality, &c.

The cost of labor, rent, seed, &c., required to produce 2,000 pounds or 1 ton of wheat may be illustrated thus:

The general yield per acre ranges from 1½ to 2½ tons of 2,000 pounds; therefore, as average say 2 tons per acre; this gives 1 ton per half acre.

The labor of one man and one pair of horses, with implements and necessary extra labor, is provided for each 50 acres, the cost of which is £209 5s.

	Per ton of 2,000 pounds.
The proportion for one-half acre is, say .....	\$10 64
Carriage to market, say .....	1 52
Rent (\$7.30 per acre) .....	3 65
Seed, 70 pounds .....	1 22
Manure, estimating the proportion of unexhausted manure in ground as well as manure actually applied to the wheat, say .....	2 43
<b>Total</b> .....	<b>19 46</b>
Less estimated value of straw for bedding, &c., yield 30 cwt. per acre, 15 cwt. ...	4 86
<b>Net</b> .....	<b>14 60</b>

With regard to the last item, it may be explained that straw, in terms of the lease, must be all consumed on the farm; therefore none of it is actually sold.

The labor expended in producing a crop differs greatly on different farms, and differs greatly also on the same farm in different seasons. The above estimate, therefore, of the cost of labor of producing 2,000 pounds of wheat may be accepted as only an approximation to the actual labor cost. The labor cost is also influenced by the place which the wheat crop may occupy in the rotation.

In the foregoing instance the wheat crop is supposed to follow a green crop. Wheat has long been one of the main crops of this district, though for the past few years the market price has been so low that its growth is very unprofitable.

Thrashing and winnowing complete the preparation of grain for the market, so far as the farmer is concerned. The grain is always sold by him before being ground.

National taxes, local rates, &c., amount to 1 shilling per pound rental.

The produce is almost all consumed in this country.

*Farm No. 2.*—This farm consists of 300 acres arable land of fair quality. It is leased for nineteen years. The annual rental thereof is \$7.30 per acre. The general conditions of labor thereon are, according to a five years' rotation, as follows:

First year's crop: Oats after "lea";\* average crop, 54 bushels per acre; to plow, twelve hours' work for man and pair of horses; to harrow and roll, one hour; reaping and lading, two hours; value of oats per bushel, 60 cents.

\* "Lea" is a Scotch agricultural term, meaning land in which grass has been sown together with some kind of grain, and which land continues under grass until the following year. Cattle may be pastured on it the first year, in which case it is then "lea." Otherwise, if a grass crop is reaped from it during first year the land is only "lea" in second year, when cattle are pastured on it.

Second year's crop: Potatoes or turnips; preparing one acre, twenty-five hours; for weeding, four laborers, one horse and driver, nine hours; for storing, three laborers, one horse and driver. Potatoes: Average crop, 6 tons per acre; value, \$10.95 per ton. Turnips: Average crop, 15 tons per acre; value, \$3.65 per ton.

Third year's crop: Barley, same labor as with first year's crop; average crop, 36 bushels per acre; value per bushel, 85 cents.

Fourth year's crop: Hay; 1 ton 10 cwt.; value, \$24.33 per ton; after-math, \$2.43 per acre; securing same, \$1.21 per acre.

Fifth year's crop: Pastured with sheep or cattle; value, \$7.30 per acre.

The tools and machinery used on this farm are plows, harrows, grubbers, drill-grubber, rollers, reapers and mowers, grain-sowing machine, turnip-sower, potato-planter and potato-digger, carts, manure-forks, hoes, pitchforks, scythes, fanners, rakes, spades, and picks.

The rates of wages for laborers are shown thus: Four horsemen, engaged per year, average wage \$121.66, and perquisites consisting of 26½ bushels of oatmeal during the year and 1 pint of sweet milk per day; one cattleman, same rate; women laborers, 28 cents per day, in harvest time 73 cents, payable monthly. Nine hours' labor per day.

Shelter is provided in cottage having three apartments; rent, \$24.33 per annum.

Thrashing the produce of an acre of grain by steam occupies one hour; dressing and measuring said produce, one hour; sold by the quarter (a measure of 8 bushels); value at present averages, oats \$4.86, barley \$6.81; sold for consumption in the district.

Potatoes dressed with 1½-inch sieve, sent per rail and ship to London, Liverpool, and Manchester; average value, \$6.32 per ton at farm.

The taxes paid on this farm are the following:

Road tax, 3½d. per pound of yearly rent .....	\$31 94
Poor rates, 5d. per pound of yearly rent .....	45 62
School rates, 3d. per pound of yearly rent .....	27 37
Income tax, 1½d. per pound of yearly rent .....	15 97
Gig tax 15s. per annum .....	3 65

Nothing from this farm exported except cattle and horses, and these for breeding purposes alone.

OSCAR MALMROS,  
*Consul.*

UNITED STATES CONSULATE,  
*Leith, June 4, 1886.*

## IRON WORKS OF SCOTLAND.

### REPORT OF CONSUL UNDERWOOD, OF GLASGOW.

I submit a report upon the Langloan Iron Works, for which the data have been carefully sought, and have been verified by my personal observation and by the care of the proprietors, Messrs. Robert Addie & Sons.

#### LOCATION OF WORKS.

The Langloan Iron Works, at Coatbridge, which are connected with the Caledonian and North British Railways, about 9 miles from Glasgow, were established in 1841 by Messrs. Addie, Miller & Remkin, and are now owned and managed by Messrs. Robert Addie & Sons.

At the beginning there were two furnaces; another was added in 1842 and three more in 1844. In 1880 there were seven furnaces in blast. At present there are six, from 42 to 82 feet high, the former capable of producing 13,000 tons per annum and the latter 19,000 tons.

The works cover a space of 35 acres, and have a capacity of 300 tons of pig-iron per day.

The location of the works was probably determined by the proximity of the mines of iron and coal, which are near but not immediately adjoining. The coal mines, which are owned and worked by Messrs. Robert Addie & Co., are within an average distance of 2 miles, and are connected with the works by railway tracks.

#### ORES.

The iron ores used consist of two kinds of "black-band" and two kinds of "clay-band," with mixture of Spanish and English hematite.

The proprietors own and work the iron mines in the vicinity of their works; they are also part owners of iron mines in Spain; but the English hematite, of which but little is used, is purchased.

The cost of the Scotch ores varies according to the depth of the levels and the thickness of the seams or veins. The minimum cost may be stated at 9s. per ton of 2,240 pounds.

The percentage of iron in "black-band" ores averages 58 per cent.; that of "clay-band" averages 42 per cent.

The Spanish ore, delivered at the works, costs 13s. 4d. per ton (2,240 pounds), which includes 1s. 3d. freight from Glasgow.

The composition of pig-iron varies according to the purpose for which it is intended.

The proportion of Spanish hematite used in these works is from 18 to 22 per cent.

The proprietors sell large quantities of coals, besides supplying their works, but they do not sell any iron ores.

The only fuel used at the works is the hard bituminous, splint coal, the cost of which is about 5s. per ton (2,240 pounds). This coal is put into the blast furnaces in its raw state, and the gases generated by combustion are carried off by large tubing to a separate plant, where the ammonia and tar contained in the gases are extracted by a new process lately patented by the Messrs. Addie both in Great Britain and America. The purified gases are then passed on to be utilized at the heating stoves and boilers. When the six furnaces are in blast 500 tons of coals (2,240 pounds) are required in each twenty-four hours.

The manufacture of pig-iron is no longer a mechanical process, but a series of chemical processes, conducted on a large scale under the latest scientific lights. The chemist is the moving force and has the position of responsibility.\*

One hundred tons of coal produce upon an average 1 ton of sulphate of ammonia and 2,300 gallons of tar. Sulphate of ammonia is worth at present here £12 per ton and coal tar 2d. per gallon in large quantities.

#### MACHINERY.

There are upwards of seventy steam-engines in use in the various departments of the works and collieries. The three largest are used to

\*The processes of eliminating coal tar and producing sulphate of ammonia, as carried on at these works, are fully described and illustrated in a paper read by Mr. Jones at the late meeting of the Iron and Steel Institute at Glasgow, and which is included in the second volume of the Transactions for 1885.

blow the furnaces; these have steam-cylinders 50 inches in diameter and blowing-cylinders 100 inches in diameter. Two of these three are coupled and have 750 horse-power; the other single engine has 300 horse-power.

The stroke is 9 feet in each. The engines are fine specimens of work, and are noticeable for the extreme neatness with which they are kept. The Messrs. Addie give annual prizes for the best-kept engines, the award being made by engineers from Glasgow.

The works are never stopped except for repairs, running seven days in the week, with two sets of hands, dividing the twenty-four hours.

#### WAGES AND HELP.

Laborers in the works receive from 2s. 2d. to 2s. 6d. per day; furnace-men, keepers, and fillers receive from 3s. 9d. to 7s. 6d. per day.

Wages have steadily declined during the last five years. The proprietors state that they have noticed no change in the temper or efficiency of the men, and that the decline in wages has not affected the productiveness of the furnaces. They believe the men are better behaved and steadier, as with their low wages they have less to spend after providing for their families.

The proprietors regard their men as a fair average of those employed about blast furnaces. Appreciable differences exist between men in different establishments, but such differences are by no means constant, local and temporary causes often raising or lowering the class in any given place for the time being.

The average number of men employed in these works when the six furnaces are in blast is 250.

#### COST PER TON.

The estimated cost of the labor required to produce a ton of pig-iron (2,240 pounds) is 2s. 6d. This means the labor at their works, and does not include any previous labor, such as mining, &c.

Royalties are paid both for coals and ores—on coals, 8d. per ton; on "black-band" ores, 2s. per ton; and on "clay-band" ores, 9d. per ton; but these are included in the cost of coals and ores heretofore stated.

To arrive at the cost of a ton of pig-iron many things would have to be taken into consideration, upon some of which I have no definite information. The present value of the plant is a matter of conjecture, the works having been often repaired and enlarged, and their real value depending not so much upon their original cost as upon their present profitableness. The cost of coals is reasonably constant; that of iron ores varies, as has been stated, but the limits of variations are not given. The present rates of wages, highest and lowest, have been stated, but without any detailed classification of the working force, so that there are few data to establish by any comparison the effectiveness or the true cost of wages. The processes of eliminating coal tar and ammonia are new; the machinery for the processes is expensive, and the prices obtained for the products are variable. The tar brings a very small price, but sulphate of ammonia is in fair demand for manure. The result of the elimination upon the cost of producing pig iron, although it certainly lessens it, cannot be absolutely stated. It is conceivable, of course, that the sale of coals by the proprietors might have an important bearing upon the general results of their operations. It may be added that the best pig-iron contains 94 per cent. of pure metal.

Appended is a tabular statement of the actual cost of living of workmen, taken from data furnished by the co-operative society's store at Coatbridge, in the vicinity of the works

FRANCIS H. UNDERWOOD,  
Consul.

UNITED STATES CONSULATE,  
Glasgow, April 16, 1886.

*Cost per week of living of workmen at Langloan Iron Works, Glasgow, Scotland.*

Items.	Coal miner. (Wages, \$5.59 to \$5.83 per week. Man, wife, and two children.)		Ironstone miner. (Wages, \$5.34 to \$5.59 per week. Man, wife, and three children.)		Pitheadman foreman. (Wages, \$6.32 per week. Man, wife, boy of twelve years, and child of four years.)		Retail price of food at this date, viz, March, 1886.
	\$0 64	\$0 52	\$0 53	\$0 54	\$0 58	\$0 48	
Bread, white .....							Two qualities, for 4-pound loaf 9 and 11 cents.
Breakfast rolls .....	12	10	6		12	6	4 cents per pound.
Tea biscuits .....	8	8		6	12	4	8 cents per pound.
Oatmeal .....	6		6	6		12	24 cents per 7 pounds.
American flour .....	18	18	24	18		6	18 cents per 7 pounds.
Potatoes .....	16	18	15	16	12	6	Two qualities, 12 and 16 cents per 14 pounds.
Tea .....	15	15	12	12	26	26	Various qualities, 48 cents to 73 cents per pound.
Sugar, white .....	14	14	26	27	20	14	4 cents and 5 cents per pound, white.
Butter .....	36	34	41	38	66	85	From 24 cents for salt butter to 86 cents for fresh butter.
Cheese .....	12	12	15	16	10	4	12 cents per pound.
Beef .....	48	50	44	42	56	36	Boiling beef, 12 cents; steaks, 20 cents to 24 cents per pound.
Bacon .....	31	32	24	23	34	60	From 8 cents to 13 cents per pound.
Eggs .....	10	14	12	11	20	12	16 cents to 20 cents per dozen.
Jelly (preserves) .....	11	11	8	8	8	8	4 cents to 5 cents per pound.
Milk .....	21	21	18	20	16	18	
Soap .....	8	11	7	7	16	16	3 cents to 5 cents per pound.
Tobacco .....	26	26			26	24	97 cents to \$1.05 per pound.
Oil for pit and house use.	20	19	26	25	12	12	Linseed oil, 48 cents, and paraffine, 11 cents per gallon.
Boots and shoes .....	18	18	18	18	18	18	
Clothing .....	40	40	37	37	41	41	
Sundries .....	6	7	12	14	6	6	Sundries, such as salt, spice, &c.
School .....	2	2	2	2	2	2	
Medical attendance.	4	4	4	4	4	4	
Insurance society .....	6	6	6	6	6	6	
Rent .....	50	50	50	50	50	50	House of two apartments.
Coal .....	36	36	36	36	32	32	
Total .....	5 28	5 28	5 02	4 96	5 63	5 56	

NOTE.—The above are men in the prime of life, good workmen, and able to make the best wages. Two weeks' food has been given so as to get an average. The cost of boots, shoes, and clothing has been arrived at by inquiry of the people themselves. No liquor is used as a food. It is only used as a medicine or as a luxury. Each workman who is a householder has a garden, and raises vegetables for his own table. Fruit at this season is not used, except as an extra or luxury. Whatever the wife and children earn is in addition to the above wages.

**WORSTED INDUSTRY OF BRADFORD.**

*REPORT OF CONSUL GRINNELL, OF BRADFORD.*

Among the conditions which enable England to manufacture as cheaply as Germany and more cheaply than France are, I think, the following:

(1) England in proportion to her population and wealth is less heavily taxed than Germany and France.

(2) England is not burdened with compulsory military service, which is imposed upon all men in Germany and France for three to five years. Aside from the number of workmen annually taken away from labor the vast standing army thus created is supported directly or indirectly by the rest of the people.

(3) Food is at least as cheap in England as in Germany, and much cheaper than in France, where the importation of food products is subject to taxes already considerable and recently augmented.

These three reasons are, in my opinion, sufficient to account, in part at least, for the advantageous position of England in her manufacturing industries.

The following information I have obtained, through the courtesy of a personal friend, respecting the worsted industry:

I own a worsted, combing, and spinning mill. I employ 24 carding machines and 20 combing machines, of which 8 are double combing. The number of spindles is 12,000. The wages paid are \$60,000 per annum, including wool sorting, washing, combing, spinning, doubling, winding, warping, and reeling. The business is chiefly the production of worsted coating yarns from Botany wool, a large proportion being double combed and dyed mixtures. The indicated horse-power of the engines is 400. The production of yarn is 12,000 to 15,000 pounds per week, the chief counts varying from 2-24's to 2-48's, with moderate proportion of finer counts, such as 2-60's, 2-66's, 2-70's, 2-100's. The wool used is chiefly merino from Australia and River Plate, South America. The number of work people employed is 420, and the rate of wages paid for 56 hours per week is as follows:

Occupation.	Wages.	Occupation.	Wages.
Manager.....	\$19 46	Doubling overlooker.....	\$8 02
Foreman wool sorter.....	8 51	Spinners.....	{ 1 82
Ordinary sorter.....	6 56	Jobbers (boys).....	{ 2 43
Washers (men).....	{ 4 86	Doffers (girls and boys).....	2 19
Carding and combing foreman.....	4 50	Half-timers (girls and boys).....	{ 2 31
Carding overlooker.....	14 60	Doublers (girls).....	{ 60
Card cleaners (men).....	7 29	Winders (girls).....	2 31
Card feeders (young women).....	{ 4 74	Reelers, warpers (women).....	3 28
Combing overlooker.....	2 31	Warping overlooker.....	8 02
Comb minders, Nobles' (young women).....	2 43	Packers.....	4 86
Gill-box minders (young women).....	7 29	Foreman mechanic.....	10 94
Drawing overlookers.....	2 92	Mechanics.....	7 29
Drawers (young women).....	2 43	Engineer.....	12 16
Rovers (young women).....	2 31	Stokers.....	5 34
Spinning overlooker.....	8 02		

**THE HABITS OF LABOREERS.**

To learn the habits and manner of life of the working people I have had personal interviews with several families, and in addition have verified the result obtained through the courtesy and good nature of Mr. Joseph Wright, a local authority among the work people of Wib-

sey, a prosperous and populous manufacturing suburb of Bradford. Mr. Wright acts as legal adviser and trustee of all the working people in his neighborhood, enjoying their most implicit trust and confidence. No one is better acquainted with their habits and manner of life than he. The result is as follows, for a family of four people, husband, wife, and two children:

At 5.30 or 6 a. m. a breakfast of bread and tea, of which the cost per week is .	\$0 24
At 8.30 breakfast of bread, butter, and tea .....	36
At 12 (noon) lunch of bread and cheese (sometimes meat) .....	1 46
At 6 for dinner, consisting of bread, potatoes, and meat, with beer.....	1 70
The weekly rent for a two-roomed stone cottage, including taxes, is .....	91
The cost of coal averages through the year, per week .....	48
Clothing for family.....	73

This represents the cost of living of good workmen, earning \$6.07 to \$6.56 per week. It will be seen that little or nothing can be saved until the children are of age to work in the mill.

Where the man is an inferior workman the cost of living is reduced in proportion, the lunch and dinner consisting of bread, potatoes, and bacon, with fresh meat two or three times a week. As an instance of the manner in which a very poor family can live, I give the following: The family consists of five persons—husband, wife, and three children. The husband earns only \$2.43 per week; the eldest child, \$1.21 per week. They pay \$1.15 per week for rent of house. The breakfast, at 8 o'clock, consists of bread, butter, and tea. The dinner, at 12, of potatoes and bacon, and occasionally fresh meat. The lunch, at 5 p. m., of bread, butter, and tea. The supper, at 9, of bread, cheese, and beer, although not always the latter. Coal is paid for by the week and the clothing as well, although in this the family were sadly deficient.

This, however, is almost an extreme case, and the vast majority live much better, eating meat once a day, sometimes twice.

The cost of the principal articles of food is as follows:

	Cents.
Flour, per stone of 14 pounds.....	36
Potatoes, per stone of 14 pounds.....	16
Milk, per quart .....	6
Butter, per pound.....	36
Bacon, per pound .....	12 and 14
Meat, per pound .....	12 and 16
Tea, per pound.....	48
Coffee, per pound .....	30

I should observe that at many of the mills provision is made to furnish the operatives with cheap breakfasts and lunches or midday dinners, a sufficiently substantial dinner being provided at 6 or 8 cents per head.

#### COST OF PRODUCTION.

I append a very full and detailed statement of the elements of cost entering into the manufacture of cotton yarns, showing the original capital used in the erection of the mill and the purchase of the plant, and the yearly expenses, which has been furnished me by a large cotton spinner in my consular district:

(1) The area of land used in the mill is 150,435 square feet; its value is about \$40,000. The buildings are constructed of stone, and, with the engines, boilers, shafting, dams, and offices, cost \$318,500.

(2) The area of floor surfaces in actual use is 200,000 square feet. The cost per square foot is about \$1.33.

(3) The machinery used includes 4 openers, 3 scutchers, 160 carding engines, 12 drawing frames, 10 slubbers, 21 intermediate frames, 55 jack frames, 78 self-acting mules, 26 twiners, and 15 ring doubling frames.

- (4) There are 160 carding engines.
- (5) The width of the carding engines is 40 inches on the wire.
- (6) Seventy-eight mules, 20 twiners, 15 ring doubling frames, 55 jack frames, all self-acting, are in use.
- (7) The number of spindles in use is 84,634.
- (8, 9, and 10) No weaving done.
- (11) The value of the machinery employed, exclusive of boilers, engines, and shaftings, is \$275,000.
- (12) Steam-power is used in the mill of an indicated force of 1,500 horse-power.
- (13) The price of coal, delivered at the factory, is \$1.58 per ton.
- (14) The taxes paid are as follows: Poor rate, \$603; property tax, \$399; borough and district rates, \$2,453.
- (15) The other expenses entering into the cost of production are (average per annum): Insurance against fire and employer's liability, \$2,430; depreciation on freehold buildings, engines, boilers, and running-gear, \$12,200; depreciation on machinery (10 per cent.), \$17,000.
- (16) I regard 10 per cent. as a fair return on capital invested.
- (17) My mill produces about 45,000 pounds of cotton yarn per week, varying with the counts spun, which range from 16's to 90's.
- (18) About 560 persons are employed in and about the mill.
- (19) My employes work fifty-four hours per week. Their wages average \$1,460 per week, exclusive of administration.
- (20 and 21) Carding machines are all self-strippers, including Wellman's, Hetherington's, and Evan Leigh's "Revolving Fate" patent carding engines, each of which has special advantages for different purposes.
- (22) No looms used.
- (23) I use American and Egyptian cotton. The price of American is 12 cents and Egyptian cotton 13 cents per pound.
- (24) No wool used.
- (25) Terms vary with the market, fourteen and thirty days' credit being the usual terms.
- (26) The prevailing rate of interest paid by responsible parties is 5 per cent. when the money is obtained from a bank and 4½ per cent. when obtained from mortgage on buildings.
- (27) The working capital used in my mill is from \$60,000 to \$100,000.

As to the general conditions of the working classes, I have before said it is exceptionally good in the Bradford consular district. Strikes are rare, and when recently the workmen of London, Birmingham, and almost all the larger towns of England began a series of riots, those of Bradford remained quiet and showed little or no sympathy for their fellow-workmen.

This prosperous condition of the people here is largely due to the charity of the better classes in Bradford, who do much to alleviate the condition of such working men and women as are unemployed or disabled. Great good has also been accomplished in founding coffee taverns, which have rapidly increased in favor, and have done more than anything else to counteract the evil effects of gin and beer saloons. These taverns, besides selling milk, coffee, tea, and chocolate, provide simple lunches and dinners at very low prices.

In closing I may say that the British workingman is very different and very inferior to the American of the same class. He is indifferent, stolid, dull of comprehension, and unambitious. He follows in the footsteps of his father and grandfather, content if he can earn enough to support himself and family, and happy if the surplus will allow of some coarse form of recreation or dissipation. He seems to find no possibility of bettering himself and no desire to see his children better educated and more capable of succeeding in the higher walks of life, but works on in dull apathy, without hope or ambition.

WILLIAM F. GRINNELL,  
*Consul.*

UNITED STATES CONSULATE,  
*Bradford, March 25, 1886.*



## LABOR IN LONDON.

## REPORT OF CONSUL-GENERAL WALLER.

The purpose of this report, prepared in compliance with the labor circular of the State Department of July 15, 1885, is to show as clearly as possible (1) what proportion the cost of labor in this country at the present time bears to the different items of cost and to the whole cost of the product engaging attention, and (2) the manner in which the wages of the laborer enable him to live; and as the circular calls only for information in respect to one or two of the leading industries of each consular district, the report undertakes to deal only in the first part with the "making of leather," and in the second part with the "smelting of iron"; and, following the suggestion of the circular "as to miscellaneous data," it is confined, it will be observed, to a typical instance and illustration of each of these industries, the former of which is carried on in London and the latter financially managed here.

## LEATHER.

## DESCRIPTION OF A BERMONDSEY TANNERY WITH A CAPACITY OF 300 HIDES AND 200 SKINS PER WEEK.

Bermondsey, one of the great divisions of London, is almost exclusively devoted to the various branches of leather manufacture. There are, it is estimated, nearly 1,500 leather firms located here, and the homes of 45,000 employes are situated within it. In this district the leather field, market, and exchange of Great Britain, the information and statistics herein presented were obtained from persons connected with and interested in its industries, the names of whom, were I permitted to give them, would be recognized in America as authorities on the subject.

The ordinary average tanning and currying factory of Bermondsey has a capacity to treat and dispose of 300 hides and 200 calf-skins in the course of a week. Such a tannery is arranged, whenever practicable, on the square plan. The warehouse and offices, including the side gateway, usually have a frontage of about 70 feet long and 40 feet deep. The buildings are four stories in height; the ground floor is used for offices, and the upper floors for storage of "butts," dressing and upper leather. The tan-pits are situated in the rear of the warehouse, and are surrounded by sheds and the currying premises, this arrangement conducing, it is found, to the easy transition of materials in the various stages of manufacture from one place to another.

There are usually 100 tan-pits proper, 16 of which are used for coloring, 12 for "handling," and 20 for "layer"-pits (where the tanning process is completed), and the rest for the care of the "offal," "bellies," "shoulders," "cheeks," and "faces." There are also usually 8 or 10 "spender"-pits, used in exhausting partially-spent bark, and 12 or 15 other pits for "liming" and "baiting" dressing hides. The ground floor of the curriers' block is reserved for the scouring and shaving processes. The second floor is used for finishing and waxing, the remaining floors for currying and drying.

## COST OF PLANT.

The details of the cost of the machinery and implements used in such tanning and currying establishment, obtained from dealers therein, are substantially as follows:

Items.	Cost.	Items.	Cost.
<b>TAN-YARD.</b>		<b>CURRIERS' PREMISES.</b>	
12 horse-power horizontal engine, feed-pumps, &c.	\$575 00	Sumac vat, 12' by 8', partitioned in center	\$25 00
20 horse-power boiler (tannin burning) with pumps, exhaust-pipes and connection	925 00	Scouring tube	70 00
Bark mill, medium size	275 00	Slate table 20' by 8' 6"	18 75
Disintegrator, medium size	100 00	5 shaving beams	125 00
Pendulum roller (for offal)	225 00	Tables for finishing and waxing rooms.	60 00
Roller and bed (for butts)	170 00	Shed tables	
2 drums and fittings	320 00	1 dozen each, large and small shaving knives	15 00
1 set of crank-stocks 24 inches wide	225 00	1 dozen scouring stones	1 12
600 feet 4-inch flange-piping, elbows, washers, bolts, and nuts, complete	175 00	1 dozen thick and 8 thin aleekers	3 00
4 fleshing-beams	45 00	1 dozen extra thin table aleekers	75
1 set of 3-throw 6-inch pumps	200 00	1 dozen whitening aleekers	2 00
60 feet of shafting, carriage brasses, brackets, lubricators, couplings and pulleys	187 50	1 dozen graining boards	3 00
4 wheelbarrows	28 00	1 dozen brushes (various)	10 00
4 fleshing knives	7 00	1 dozen galvanized buckets	1 50
4 unhairing knives	5 00	Rub stone	3 75
4 striking pins	7 00	Cleaning stone	10 00
8 tan forks	7 50	Pots, pans, hooks and sundries	250 00
4 shovels	6 00	Steam-piping for drying room, fittings, and sundries	
1 dozen sharp and blunt hooks	7 50		598 97
1 dozen poking-down sticks	1 50	<b>WAREHOUSE AND OFFICES.</b>	
1 dozen plungers	6 50	Weighing machines, tables, fittings, &c.	750 00
2 jets at 4s. 6d. each	2 00	Safts, desks, books, fittings	500 00
Incidental expenses, fitting, &c.	50 00	4 horses	800 00
<b>Total</b>	<b>3,551 50</b>	Van and carts	825 00
		Stable fittings, harness, &c.	300 00
		<b>Total</b>	<b>2,675 00</b>

\* Can be cut from empty casks.

## HIDE TANNERY PROCESSES.

Calf-skins are received in a light shed 100 feet long by 20 feet deep, and hides in a strong shed having two floors, 140 by 20 feet in dimensions. The "liming" and "unhairing" process requires 8 to 10 days for hides, and 6 to 8 days for skins. Hides, after being "fleshed," are sorted and rounded. One in three is usually selected for dressing purposes. From the rest, which are intended for sole leather, the bellies and shoulders are taken off for separate tannage. Leather of a fair quality is turned out by what is known as the new or "chemical" process for "butts" in from 3 to 4 months, and in from 10 to 12 weeks for light hides and "offal."

The average weight of tanned leather produced in such a factory compared with the weight of the hides in their green state is usually as follows:

	Pounds.
200 "butts" 24 to 26 pounds, each 25 pounds	5,000
200 pairs "bellies" averaging 8 pounds per pair	1,600
200 "shoulders" averaging 5 pounds	1,000
100 "dressing" hides averaging 38 pounds	3,800
<b>Total weight of leather from hides</b>	<b>11,400</b>

The whole cost of this tannage is 9 cents per pound; for direct manual labor 2½ cents, and for materials used (a mixed tannage of oak bark, gambia, myrabolanes, valonia and extracts) 6½ cents.

## CALF-SKIN TANNING PROCESSES.

Calf-skins, averaging  $9\frac{1}{2}$  pounds each, after being thoroughly "limed" are transferred to "bake pits" for the exclusion of lime and dirt, by the use of "pigeon puse," and then after their suppleness has been restored by being worked over the "beam," they are put into tan-pits. In these they remain in pure oak bark, or mixed tannage, for 7 or 8 weeks, and then after one week of drying (now averaging in weight 8 pounds each) are passed to the currier.

The whole cost of this tannage is 8 cents per pound,  $2\frac{1}{2}$  cents for direct manual labor and  $5\frac{1}{2}$  cents for materials used.

## CURRYING CALF-SKINS.

Calf-skins, after remaining a short time in "compo" (weak sumac liquor), are "shaved" and returned to the "compo" for "setting" or "striking out," are then drained out over "horses," and then stuffed and hung up for drying to a certain degree. They are now stacked into piles or heaps to generate heat and feed each other, and are afterwards removed to a table where the refuse grease is "slickered" off. They are now washed on the waxing side with a little soda and water to further kill the grease and render them fit for "sizing" and "waxing." The time occupied in the curriers' hands is about three weeks, and the skins gain in weight from 1 to  $1\frac{1}{2}$  pounds, say  $1\frac{1}{2}$  pounds. The skins, as finished for sale, should weigh (200 averaging  $9\frac{1}{2}$  pounds each) 1,850 pounds. The cost of this currying, 8 men being employed, is 8 cents per pound (for labor nearly 4 cents per pound and for materials, dubbin, oil, color size, and sumac, a trifle more than 4 cents).

The cost of each process is as follows:

Process.	Per dozen of 96 pounds.	On 200 skins weighing 8 pounds each.
Shaving and flattening.....	\$0 92	\$15 23
Stouling before flattening.....	16	2 80
Scouring flesh and grain.....	49	8 10
Scouring out compo.....	24	4 05
Stuffing.....	78	13 16
Tallowing.....	12	2 03
Finishing.....	97	16 22
Making.....	73	12 16
Total.....	4 86	72 75

The direct cost of labor in the manufacture of 300 hides and 200 calf-skins is \$216.52, and the incidental cost of such production is \$232.11. The whole cost is \$448.63, distributed as follows:

Employés.	Cost of labor for one week.	Employés.	Cost of pro- duction for one week.
1 yard foreman.....	\$24 33	1 chief clerk or manager.....	\$19 46
1 pump man.....	6 08	2 assistant clerks.....	10 95
1 engine-driver.....	7 29	1 salesman.....	19 46
4 lime jobbers.....	24 33	2 commercial travelers.....	48 06
10 yard men.....	55 96	Expenses for same.....	68 13
6 shod men.....	43 79	4 warehousemen.....	24 33
5 beams men.....	47 45	3 carmen.....	16 40
3 boys.....	7 29	1 town traveler and expenses.....	14 59
Total.....	216 52	Feed for 2 horses.....	9 73
		Total.....	232 11

The result of the thorough and careful investigation, aided by competent persons retained for the service, as to the price of green hides and skins during the year 1885, and the market value of leather during the same period, the miscellaneous expenses of conducting such a tannery as this report contemplates (having a capacity to dispose of 300 hides and 200 skins per week every week in the year) is given in the following table, which is based on a year's business with full working time :

*Prices of green hides and skins, market value of leather, and miscellaneous expenses of conducting a tannery in 1885.*

## DR.

Items of cost.	Cost per week.	Cost per year.
<b>Raw material:</b>		
300 market hides, averaging 75 pounds each, at 8½ cents per pound .....	\$1,968 75	\$102,375 00
200 calf-skins, averaging 10 pounds each, averaging in cost \$1.75 each .....	350 00	18,200 00
<b>Hides:</b>		
Cost of tan-yard labor, 2½ cents per pound on 11,400 pounds .....	\$27 75	17,048 00
Materials used on hides .....	710 64	36,953 28
<b>Skins:</b>		
Cost of tan-yard labor, 2½ cents per pound on 1,600 pounds .....	36 00	1,872 00
Cost of curriers' labor (\$71.56), and materials (\$78.44), at 8 cents per pound on 1,850 pounds .....	148 00	7,696 00
<b>General expenses:</b>		
Wages (incidental, cost of production) .....	232 12	12,070 24
Rent of premises .....		7,299 75
Rates, taxes, and insurance .....		1,559 45
Lighting, gas, &c. ....		1,094 95
Coal (say 800 tons, at \$3.65) .....		1,095 00
Keeping of 4 horses .....		780 00
Repairs and sundry incidentals .....		1,000 00
Stationery, postage, freight, and other office expenses .....		683 98
<b>Profit and loss expenses (estimated):</b>		
Sales under market value, 5 per cent. ....		12,255 70
Bad debts, 2½ per cent. ....		6,127 85
Commissions to factors, 1 per cent. ....		2,446 24
Depreciation of value of plant (10 per cent. on \$10,000) .....		1,000 00
Loss of time and accidents, 2½ per cent. ....		6,127 85
<b>Net profit on year's business (estimated) .....</b>		237,680 29
		6,933 71
		244,624 00

## CR.

Articles of production.	Amount per week.	Amount per year.
<b>Salable produce from raw material:</b>		
<b>Hides:</b>		
300 pairs horns, at 4 cents each, \$12 .....		\$624 00
15 cwt. hair .....		825 00
20 cwt. fleshings, at \$12 .....		240 00
1 ton glue .....		237 00
<b>Skins:</b>		
Hair .....		100 00
Fleshings .....		148 00
Glue .....		32 00
<b>Manufactured leather:</b>		
200 butts, averaging 25 pounds, at 41 cents per pound .....	\$2,050 00	106,600 00
200 pairs bellies, averaging 8 pounds per pair, 1,600 pounds, at 16 cents per pound .....	288 00	14,976 00
200 shoulders, averaging 4 pounds each, at 25 cents per pound .....	200 00	10,400 00
100 dressing hides, averaging 33 pounds each, at 38 cents per pound .....	1,254 00	65,208 00
200 calf-skins, averaging 3½ pounds, at 47 cents per pound .....	868 50	45,214 00
		244,624 00

The business of making leather until three or four years ago was an exceedingly lucrative one; since then, however, it has probably suffered as much as any other industry from general depression, and in some of its departments, more than most other industries from foreign competition. In the foregoing table the relations of the cost of labor, miscellaneous expenses, and materials are not stated with absolute accuracy. This could not be done unless the manufacturer made minute calculations every day in the year with this object in view. The table, it will be observed, does not charge interest on capital invested, and is based upon continuous working every secular day in the year. The percentages allowed therein for losses from sales under market value, from production of inferior qualities, from bad debts, and from depreciation of value of plant, do not comprehend all the things that ought to be considered in the reduction of apparent profits, or that will occur to the business men for whom this report is intended.

#### WHAT WORKMEN DO WITH THEIR WAGES.

The three classes of workmen heretofore mentioned respectively get \$9.73, \$7.30, and from \$5.60 to \$6.08 wages per week when working full time. This income, supposing a family of four in each case—husband, wife, and two children—is expended by those of average prudence in substantially the way pointed out in the following table. In the case of the lowest wage-earner there are added 87 cents a week, the wife's contribution from her washing or other work. The addition that children are able in some cases to make to the weekly stipend is usually absorbed in extra personal expenses, and does not affect the general family economy.

Items.	Workman earning per week—		
	\$9.73.	\$7.30.	\$5.60 to \$6.08, including wife's earn- ings.
Rent of lodgings .....	\$1 82	\$1 84	\$1 10
Household expenses .....	4 38	3 65	3 40
Lighting and firing .....	87	37	37
Clothing .....	1 46	97	85
Subscriptions to provident or sick societies in case of illness .....	24	24	24
Tontine club fees, beer, savings, &c .....	1 46	73	73
Total .....	9 73	7 30	6 00

The above statement has received the indorsement of workmen of each class to whom it has been read.

Nine hours in summer and winter are an average day's work. The workman begins at 6.30 o'clock, stops at 8 o'clock half an hour for breakfast, and again at 1 o'clock an hour for dinner. At 5 o'clock his day's work is done. Saturday afternoon, in almost every manufacturing employment, is kept as a regular half-holiday.

#### CLOSING OBSERVATIONS.

Both France and Germany have an advantage over England in this industry in the cost of labor, but the cost of materials, because of import duties, &c., is about the same. Neither of these countries has yet been able to successfully compete with England in the making of heavy

or sole leather. France and Germany manufacture light leather, principally, and exchange for heavy leather their production with England. The methods of tanning heavy leather in France and Germany are said here to be far behind those pursued in English tanneries. Here, by use of stronger liquors, tanning processes are simplified and quickened, and, by more expert manipulation, heavier leather is produced. While German methods require two years to tan heavy leather, the very best of leather in England is turned out by the old processes in from 12 to 14 months, and by the chemical method used in Bermondsey in from 3 to 5 months. It should be observed, however, that the tendency here is to return to the old process, as it is found to produce a better and more enduring quality of leather. The English workman, it is claimed, by the better subsistence his higher wages afford him, is physically able to accomplish, for the same money, more than his poorer-paid and poorer-fed continental competitor.

### IRON.

The information offered in relation to iron smelting is submitted in the categorical form in which it was received from one of the most prominent men interested in this industry :

Question. How many blast furnaces are there are in Great Britain ?—Answer. Eight hundred and ninety-two.

Q. Where are they principally located ?—A. In the Cleveland district, in the north-western part of England.

Q. How many of them are now in operation ?—A. Four hundred and sixty-eight, and 424 idle.

Q. What are their average dimensions and capacity ?—A. Those of the most approved character are 80 feet high, having an interior capacity of 25,500 cubic feet. They are provided with heating stoves able to command a temperature of from 1,000° to 1,400° Fahrenheit. In such furnaces 450 tons of pig-iron are smelted weekly.

Q. How many men does such a furnace require to work it properly, and what wages do the workmen severally receive ?—A. Two keepers, 2 keepers' helpers, 2 top fillers, 8 bottom fillers, 2 cindermen, an engineer, 1 weighman, and 2 common laborers—20 in all. At the present time they are paid per week as follows: Engineers, \$14; keepers, \$13; helpers, \$6.35; top fillers, \$8.75; bottom fillers, \$7.56; cindermen, \$7.56; weighmen, \$7.56; and common laborers, \$7.56.

Q. One hundred being the unit, what is the proportion of the cost of labor to each of the items of the cost of production ?—A. Ore at furnace, 30 per cent.; coal, 30 per cent.; wear, tear, interest on plant, and incidental expenses, 25 per cent.; labor, 15 per cent.; total, 100 per cent.

Q. What was the average selling price of iron at furnaces in Cleveland district during the year 1886 ?—A. Cost of ore, \$2.47 per ton; coal, \$2.47 per ton; labor, \$1.24 per ton; incidental expenses, \$2 per ton; profit, 7 cents per ton; total, \$8.25 per ton. The figures given show a profit of 7 cents per ton, but in reality, on account of business depression, there was practically no profit on the business, nor has there been for the last two or three years, and now the prospect is gloomy.

Q. What amount of coal is required to produce a ton of iron ?—A. About 2½ tons of coal, reduced to coke. It takes 100 tons of coal to make 60 tons of coke.

Q. How does the present pay of furnacemen compare with that of former years ?—A. They earn now, in the worst of times, twice as much as fifty years ago, and the labor, because of furnace improvements, is not half as severe.

Q. What is the average number in the family of an iron smelter ?—A. Six; self, wife, and four children.

Q. Please state how an iron laborer, of ordinary frugal habits, expends his income ?—A. As follows: Receiving, say, \$8.75 weekly, he spends for meat, fish, and butter, \$2.47; clothing, \$2.08; rent and fuel, \$1.13; flour, potatoes, &c., 98 cents; groceries and milk, 63 cents; lighting, 37 cents; school, 24 cents; beer and sundries, 37 cents; doctor, relief fund, and union fees, 6 cents; not accounted for, 42 cents; total, \$8.75.

Q. Do not the other members of his family contribute something ?—A. Yes; but not enough usually to very much alter the figures given.

Q. How do English furnace workers compare in efficiency and capacity with French and German workers ?—A. They are far superior; they do one-half more work in the

same time. This is the principal reason why pig-iron was produced in the Cleveland district in 1885 for \$8.18 per ton, while it cost, it is said, \$9.87 per ton in Germany, and over \$12 per ton in France.

Q. Why can English workmen do so well?—A. They are better paid, better fed, and therefore better able to work. English furnace workmen have meat diet often, while French and German workmen seldom taste it.

Q. Are their other reasons why iron is smelted cheaper in England than on the Continent?—A. Yes. Iron and coal are found in greater abundance here than on the Continent, and much nearer together.

THOMAS M. WALLER,  
*Consul-General.*

UNITED STATES CONSULATE-GENERAL,  
*London, January 29, 1886.*

## CUTLERY INDUSTRY OF SHEFFIELD.

### REPORT OF CONSUL WEBSTER.

So great is the variety of patterns of pocket cutlery, which I will consider in this report, that it is hardly possible to ascertain a general average cost of a unit, as a dozen or a gross. The large manufacturers have in their descriptive catalogues many thousands of different patterns, all varying in certain particulars of construction that affect the cost of production. Each maker has his own catalogue of patterns and prices. Some of these patterns and prices are doubtless identical in the different catalogues. But in many cases the same patterns differ so much in "get up" and finish that they differ considerably in price.

Two lots of knives of the same pattern, bearing the same description on an invoice, from the same manufacturer, will differ several shillings in the cost per dozen, owing to the amount of labor bestowed upon them, and often in a way that no one but an expert would be likely to notice. This element of cost would not be represented in the description, full though it is, that is required in the examples given in the Department's circular of November 13.

By dividing pocket cutlery into classes an approximate average of the cost of a unit of each class may be made. Such division is recognized among manufacturers.

The grades are named fine, or best, medium, and common. It may be difficult to draw the line exactly between these grades, but the terms are well understood in the trade. Each of these grades has its own range of patterns, and hundreds, in some cases thousands, of them are in constant demand. Should it be desired to know what a dozen of any one of these patterns of a definite description would cost, different makers would vary in their estimates. But there is a price below which that knife cannot be made, and that limit is known to experienced makers. They understand the market value of all cutlery in which they deal, whether they are manufacturers or purchasers.

One fact is to be considered: The cutlery of Sheffield manufacturers is not all made upon their own premises. A very considerable proportion is given out to workmen, who hire small premises, and who work for different makers, or work is contracted for by "little masters," who employ a few men, have inexpensive places, and work for small profits. They have usually but little capital, and are liable to fall into difficulties, and thus to become dependent upon their employers.

A manufacturer of fine or best pocket cutlery would have in his regular trade a constant call for knives that would range in price from \$1

to \$8, perhaps \$10, per dozen, according to size, number of blades, covering, finish, &c. Above these he would furnish a class of goods of superior quality and finish that may be termed exceptional, such as expensive combination, sportsman, and fancy knives. These would cost \$15 to \$20 or more per dozen.

A week's work by an average man will produce 12 dozen of the knife that sells for \$1 per dozen. The wages for the week will be \$5. This sum will include the labor, such as forging and grinding, which the workmen called cutlers would not do. The \$5 may be taken as the cost of the labor that enters into the production of a dozen knives of that grade.

At the other end of the scale of prices in this class of best is the knife that sells for \$8 per dozen. Of these an average week's labor will produce 3 dozen, at a cost of \$6.50. Being a higher class of work, it commands better pay, as it takes more time.

These are the regular prices for such work in fairly good times—a fair average, obtained from manufacturers of long experience, some of whom have themselves come up from the ranks of the workmen. In times of depression like the present many men can be found who will work for lower wages.

In the middle class the range of prices will be from \$1 to \$6 per dozen. But the one-dollar knife in this class will be a different article from the one-dollar knife in the class above it, in finish and other particulars. Still there would be but little difference in the number produced or in the wages earned by a week's work. Of the knife that sells for \$6 per dozen a week's work will produce  $2\frac{1}{2}$  dozen, at a cost of \$5.50. Between these two qualities there will be a range of hundreds of different patterns and prices.

When we come down to the third class, called common, we find a range of prices from the rubbish that is sold for 21 cents per dozen, which is the cheapest Barlow knife, and for which, strange as it may appear, there is a large demand, to the common Jack-knife, at \$1.82 per dozen. Of the cheap Barlow a cutler will make 6 gross a week and earn about \$3; on the knife costing \$1.82 per dozen the workman's wages will be \$3.75 to \$4 per week.

The cost of living per week of these workmen, with a family of wife and two or three children, will be as follows, using the form given in the circular:

Items.	Cost.	Items.	Cost.
Meat and fish.....	\$0 50	Beer and tobacco.....	\$0 25
Eggs, butter, cheese.....	62	Sundries.....	25
Bread.....	50	Rent and rates.....	1 00
Vegetables and fruit.....	20	Clothing, repairs, &c., per week.....	50
Tea, coffee, sugar.....	50		
Coal and gas.....	82	Total.....	4 95
Milk.....	30		

The amount allowed for beer and tobacco is probably below the average. The man who earns \$5 is very sure to have no surplus at the end of the week. Many a workingman spends more on his beer than for bread for his family.

As to the clothing of the masses of the working people, it is difficult to tell what it costs or where it comes from. The pawnbroker and the cheap second-hand dealer could give much interesting information upon this subject. It has become quite the practice here among well-to-do people to sell their partially-worn clothing to second-hand dealers.



Great numbers of the working people depend almost wholly upon this source for their supplies. Although the first cost may be small, its frequent visits to the pawn-shop, with its inexorable 20 per cent. interest per annum which the law allows, make great inroads upon the weekly earnings; and the trouble is that many of these people are not casual but regular weekly customers. I must not say that this practice is universal of the Monday pawning of the husband's better clothes and of the children's Sunday shoes, but it is sufficiently common to require notice under the head of clothing.

The dwellings of the working people in a very large portion of the older parts of Sheffield consist of two rooms, one below and one above, with an attic.

These rent for 75 cents per week, and are often located in back alleys and crofts, where the sanitary conditions are not favorable to health. The modern improved dwelling consists of two rooms below and two bed-rooms above, with an attic, at a rent of 87 cents or \$1, according to location.

Large numbers of the workingmen are unmarried, and live as lodgers in the families occupying these houses, paying 50 to 60 cents per week for bed and washing.

What has been said upon cost of living, clothing, and dwellings will apply equally to the laborers in the other Sheffield industries.

C. B. WEBSTER,  
*Consul.*

UNITED STATES CONSULATE,  
*Sheffield, December 22, 1885.*

## INDUSTRIES OF LIVERPOOL.

### REPORT OF CONSUL RUSSELL.

#### CHEMICALS.

St. Helen's, near Liverpool, is the center of the manufacture of chemicals, which is one of the most important industries in this district and employs a very large number of workmen, and a very considerable amount of capital has been invested in the numerous works.

Chemicals have been exported direct from St. Helen's to the United States in the past five years as follows:

1880 .....	\$1,323,283 58
1881 .....	893,289 38
1882 .....	810,651 83
1883 .....	850,761 53
1884 .....	818,764 29

This does not include the greater portion sold to merchants and brokers in Liverpool and by them exported, but only the exports of the manufacturers themselves direct.

The manufacture of chemicals at St. Helen's is carried on by what is known as the "Le Blanc" process. The manufacturer begins with sulphur ore and common salt, and from these two articles are made sulphuric acid, sulphate of soda, chloride of lime, soda ash, caustic soda, and chloride of potash.

*Sulphuric acid.*—The manufacturer buys only the sulphur contained in the Spanish pyrites, the copper therein being handed over to the

manufacturer (by the wet process) of copper after the chemical manufacturer has burned off all the available sulphur.

The cost of the sulphur in the Spanish pyrites is about \$4.74 per ton, delivered at the works. The ore is broken generally by hand, owing to the larger proportion of smalls (a considerable disadvantage) which is generally made by all the mechanical stone-breakers at present known. The breaking of the stones by hand costs about 24 cents per ton of ore. When broken into pieces about  $1\frac{1}{4}$  inches in diameter the ore is wheeled into kilns, the construction and mode of working of which are well known.

The cost of labor for the wheeling in of pyrites and out of the burned ore, and for the burning of the ore in the kilns, of course varies, owing to the different circumstances at different works, but it may be taken as an average that these operations cost in labor about 24 cents per ton of the ore burned.

The sulphurous-acid gas, mixed with nitrous fumes (the nitrate of soda used varies from 28 pounds to about 40 pounds per ton of pyrites burned in works using Gay-Lussac's recovery towers, and all modern works are equipped with these towers) passes up flint-packed leaden towers into leaden chambers, which are generally constructed to work in sets of three, and of such a size as to allow of about 18 cubic feet space per pound of sulphur charged per twenty-four hours. In these chambers the sulphuric acid is formed and condensed, and a yield of about 40 per cent. oil of vitriol is expected, and generally reached, from the pyrites charged. There is usually 3 per cent. sulphur left unburned in the cinders of the ore.

The cost of the labor for superintending the chamber process, pumping, or rather blowing, the acid to the top of the towers, and generally for the manufacture of the vitriol after the burning of the ore, and exclusive of the skilled general management and analytical chemists, may be taken to average in a large manufactory about \$2.19 per ton of the ore burned.

The wear and tear of the vitriol plant is, however, very great, and it is generally calculated that the whole of it has to be renewed every ten years. The wages paid plumbers alone for the constant work of keeping it in repair are said to be nearly 12 cents per ton on the ore burned.

Thus the cost is summed up as follows:

Ore delivered, per ton .....	\$4 74
Breaking ore, labor .....	24
Burning, wheeling, &c. ....	37
Chamber process .....	18
Nitrate of soda (34 pounds) .....	1 03
Repairs to plant .....	24
<b>Total per ton .....</b>	<b>6 80</b>

The cost of a plant complete to make vitriol equal to a consumption of 60 tons Spanish ore per week is said to be as follows:

Pyrites kilns .....	\$2,433 25
Glover tower .....	2,919 90
Gay-Lussac tower .....	2,433 25
Vitriol chamber .....	14,599 50
Blowing engine, acid eggs, cisterns, &c. ....	1,946 60
<b>Total .....</b>	<b>24,332 50</b>

The vitriol made is generally used on the premises for the manufacture of sulphate of soda, but it is occasionally sold. The present price de-

livered in iron tanks, is \$5.47, and in carboys is \$6.08, per ton, less cost of carboys and tanks.

The weekly earnings of the men are as follows:

Stone-breakers (generally old men), per week of 6 days.....	\$4 87
Wheelers and kilnmen, per week of 7 days.....	7 30
Enginemmen, per week of 7 days.....	6 33
Laborers (youths), per week of 7 days.....	4 38
Foremen, per week of 7 days.....	9 73

*Sulphate of soda, or salt cake.*—The next stage in the process, after making the sulphuric acid, is the manufacture of sulphate of soda, or salt cake.

Common salt, which costs, delivered at the works, about \$2.07 per ton, is placed in cast iron pots and vitriol of about 136° Twaddell is run on to it. The waste heat from the roasting furnace passing underneath the pot supplies all that is needed.

When the charge in the pot has boiled down to the proper consistency it is pushed on to the hearth of a furnace, where it is roasted and finished.

The hydrochloric acid given off in the process is conveyed by pipes to towers built of Yorkshire stone and packed with coke, when it meets a stream of water and is condensed. This acid is then used for the manufacture of chloride of lime or chlorate of potash.

The wages paid in the manufacture of sulphate of soda are, for potmen and furnacemen, each 36 cents per ton of soda, and the cost of making a ton of sulphate of soda is as follows:

Wages (furnace and decomposing men) .....	\$0 73
18 cwt. of salt, at \$2.07 per ton .....	1 87
Fuel, about 10 cwt., at \$1.10 per ton .....	55
Various unallotted labor .....	24
Sulphuric acid .....	4 48
Wear and tear (say) .....	49
<b>Total .....</b>	<b>8 36</b>

The present market price is about \$8.76 per ton.

A small proportion of what is made is used in the manufacture of glass; the rest may be looked upon as only a process in the manufacture of other chemicals, and is used at the works where it is made, or, in cases where there happens to be more than is required, it is sold to neighboring manufacturers who do not make it, but require it for the manufacture of caustic soda or soda ash.

One furnace is capable of making from 50 to 60 tons per week, working day and night, with two shifts of men.

The average earnings of the furnace and pot men are about \$10.95 per week of 72 hours, and the laborers employed about the furnaces, wheeling and loading the finished salt cake, cinders, fuel, &c., about \$6 per week of 60 hours.

*Chloride of lime.*—The next step is to extract the chlorine from hydrochloric acid and combine it with sieved lime to make chloride of lime or bleaching powder. The acid is run into stone stills, where it is treated with manganese dioxide, and the chlorine gas given off is conveyed into leaden chambers, on the floor of which is spread prepared and finely sieved lime, which, slowly absorbing the chlorine, is converted into chloride of lime. The absorption of the gas by the lime is a slow process, and it takes about a week or thereabouts before the product is fit to be packed in casks.

The manganese dioxide used is all (except a working loss of about  $\frac{1}{2}$  to 1 cwt. per ton of powder) recovered by what is known as the Weldon process.

The wages paid in this department are comparatively high, owing to the disagreeable nature of the work. They are said, on the whole, to amount to about \$4.87 per ton of chloride of lime made.

The market price is now about \$29.20 free on board at Liverpool.

Chloride of lime is used for paper making, bleaching, and disinfecting purposes.

*Caustic and carbonate of soda.*—The sulphate of soda, mixed with limestone and small coals, is fluxed in reverberatory furnaces, more generally in the form of huge, revolving wrought-iron cylinders, lined with firebricks. In these the sulphate of soda is converted into a crude form of carbonate, called black ash.

After being drawn from the furnaces in a semi-liquid state, it is allowed to cool and harden, when it is broken into large lumps and put into rats, where it is treated with water and the soluble carbonate is dissolved out, the residue left being waste, the depositing of which causes considerable trouble and expense. Before letting the waste go some manufacturers extract the sulphur contained in it by what is known as the Mond process, but this is not generally done.

The soluble portion of the black ash (carbonate of soda with several impurities) is now ready for treating. If carbonate of soda or (as it is known in commerce) soda ash is required, the solution is evaporated to dryness and the residue calcined on the hearth of a furnace and soda ash is the product. If caustic soda is to be made, the solution considerably diluted with water is rendered caustic by being boiled with caustic lime, and after settling and clarifying, the lye is evaporated and fused in cast-iron pots, and, when cool enough, the product, caustic soda, is packed in iron drums, in which it solidifies on cooling. The usual strength made is 70 per cent. of alkali, but some consumers call for 60; this must be an old-fashioned custom, and generally against their own interest, as they have to pay for freight and packages on 36 cents more product than that which is of value to them.

The wages paid to make a ton of 60 per cent. caustic are about \$6.09, and the average earnings of the men employed are from \$6.09 to \$7.30 per week of 72 hours.

The present market price of soda ash is from 22 to 25 mills per degree, per cwt., and for caustic soda of 70 per cent. \$43.80 per ton, free on board at Liverpool.

Soda ash is used in the manufacture of glass, soap, paper, soda crystal, and bicarbonate of soda.

Caustic soda is chiefly used in the manufacture of soap, paper, and alizarine.

Chemicals are exported to almost every civilized country in the world, but perhaps the United States and Russia are the largest importers.

From the St. Helen's district the chemicals are sent to the United States by canal, rail, or river to Liverpool, where they are transhipped, the average freight to Liverpool being about 37 cents per ton, and from Liverpool to New York \$1.22 to \$1.46 per ton, and to Philadelphia \$1.70 to \$2.43 per ton. Chemicals are sent by rail to Hull, and transhipped to Russia and Norway.

There are no royalties or patents now for the processes described, but in some few works there are some being carried out which are protected by letters patent for which royalties are charged, viz: Sulphate

of soda, Hargreave's process, chloride of lime, Deacon's process, and extraction of sulphur from alkali waste by the Mond process.

The machinery used is all of a simple and well-known character, and consists of driving-engines, blowing-engines, and pumps, which do not call for special mention.

The fuel used is chiefly slack, which is about \$1.10 per ton, and buggy \$1.58 delivered at the works.

#### AGRICULTURE.

The county of Lancaster, in which this consulate is situated, being a manufacturing one, I base my remarks on the adjoining county of Chester, which is in close proximity to the consulate, and in this consular district.

The soil in some parts is a light, sandy earth, in others a dark, peat mold; but in most parts, a rich, reddish loam, variously sandy and clayey. The subsoil is in general either clay or marl, and has, to a vast extent, afforded material for the improvement of the soil. About 64,000 acres are water, 17,000 bog and morass, 28,000 heaths, commons, and woods, and the remaining portion may be described as building sites, pleasure grounds, pasture, meadow, and arable lands.

The estates generally are large and in the hands of but few proprietors, farms on the average being under 100 acres.

Generally, the farms are let yearly and renewable, though in some districts they are let under lease, usually from ten to fourteen years. The price at which they are leased is various, and is governed by quality, situation, &c., and ranges from \$4.86 to \$9.73 per statute acre.

In former years the competition for land was so great that the rental was much increased, and now that agricultural produce is so low in price, the rental is considered above its actual value, and numbers of farmers now find it difficult to raise the rent. To meet this difficulty, and to keep the rental of land at its enhanced value, some of the proprietors return, in the form of rebate, a certain portion of the rent, ranging from 10 to 30 per cent.

*Taxation.*—The latest edition of the Statistical Abstract of the United Kingdom shows that land bears a continuously decreasing share of local taxation.

The following shows the proportion that each description has paid :

Items.	1814.	1843.	1868.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Land paid.....	69	49	33
Houses.....	28	42	48
Railways.....		3	8
Other property.....	3	6	11
	100	100	100

The calculations made from the same publication give the following figures from the income-tax returns :

Items.	1878.	1890.	1894.
Rent of land.....	\$336,626,997	\$337,652,690	\$318,922,086
Rent of houses.....	520,601,069	559,677,764	618,289,355
Railways.....	148,287,254	153,108,985	179,237,526
Other charges.....	117,307,970	108,038,066	118,803,090

From these, making due allowance for the deductions, and working to a common denominator of 100, the following figures appear:

Items.	1878.	1880.	1884.
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
From land.....	27	26	23
Houses.....	50	57	53
Railways.....	13	13	14
All other property.....	10	10	10
Total.....	100	100	100

These tables exhibit very interesting results. They show that while in 1814 land paid 69 per cent. of the whole of the local rates it does not now pay more than 23 per cent. The burdens of land, therefore, have gradually and enormously diminished, the proportion it used to pay being now borne by other items.

*Labor.*—Agricultural labor is chiefly employed on large farms, the small ones being usually worked by the farmers without help except in harvest time.

The labor (male) employed is of two kinds: (1) Servants, who are usually unmarried men and live on the premises, are engaged by the year, their average wages, including board and lodging, being for team-men \$73, and cow-men \$68 per year; and (female labor) dairy maids whose chief duty is the making of cheese, \$122; and maids for ordinary dairy work, \$54 per year; (2) male laborers who are hired by the week; these receive but their weekly pay, which is at the average rate of \$4, and boys \$1.80, per week, for ten hours per day's work.

*Food, clothing, and shelter.*—These workmen live in cottages on or in close proximity to the farms on which they are employed and pay about \$20 per year rent. They contain usually four rooms, to most of which is attached a garden of sufficient size to enable the laborer to raise all the vegetables needed for the use of his family. These, together with the following, constitute the chief support of his family, say, per week—

Articles.	Quantity.	Cost.	Articles.	Quantity.	Cost.
		<i>Cents.</i>			<i>Cents.</i>
Bread..... pounds..	16	40	Sirup..... pounds..	1	5
Butter..... do.....	1	28	Cheese..... do.....	1	12
Meat..... do.....	5	60	Sugar..... do.....	1	4
Tea..... do.....	1	28	Rice..... do.....	1	5
Milk..... gallons..	4	24	Bacon..... do.....	1	12
Eggs..... dozen..	1	16			

Their clothing, which is of strong, coarse material, is usually of corduroy, fustian, or tweed, and costs about \$20 a year per man, and the clothing for his family at the same ratio.

In reference to this question I cull from an agricultural paper the following:

If there is one class well off at the present time it is the agricultural laborer who has full employment. He has wages relatively far beyond that of any other class in a similar sphere of employment.

There food of all kinds is cheap, particularly bread, potatoes, and groceries, which are the chief necessities of life.

Clothing also is reasonable, but we fancy not so cheap as it ought to be, considering the price of wool.

**Machinery and tools.**—The farming tools used are carts, harrows, drills, plows, spades, forks, hoes, rakes, wheelbarrows, &c. But, in addition to these on the larger farms steam machinery is used, viz, thrashing, mowing, reaping, and plowing. It is customary for the large farmers to hire out their steam machinery to small farmers, for which they charge for, say, a thrashing-machine, about \$7 per day, which includes the services of an engineer.

This co-operative system of hiring out machines enables both large and small farmers to work their lands at the lowest possible cost, and to compete with the import of foreign produce.

**Produce.**—Cheshire farm produce, which was formerly wheat, has of late years changed. Potatoes have now considerable attention, and average about 10 tons to the acre. Cheese, also, is a main product, and from 12,000 to 15,000 tons are annually produced. These products (grain excepted) are sold chiefly to the merchants at Liverpool at prices delivered at the nearest railway station. The average cost of cartage is 3 cents per bushel for grain and 6 cents for potatoes. Smaller produce, i. e., eggs, fowls, milk, &c., is sold in the general markets of the adjacent towns.

The following is the present market price of the principal agricultural products ruling in this district:

Red wheat.....	per 70 pounds....	\$ 1 10
White wheat .....	do.....	1 14
Butter.....	per 112 pounds....	23 12 to 29 69
Cheese.....	do.....	9 12 to 15 82
Potatoes.....	per 60 pounds....	40

In order to compete with the foreign importation of farm products, the farmers, within the past few weeks, have formed themselves into associations through which their produce is sold direct to the consumer, thus saving the profits of one or more middlemen. They have commenced with fresh meat. A competent manager is engaged, who has the cattle slaughtered and then opens shops in the centers of the working population of the towns.

The following are the prices at which the meat is sold: Beef, from 5 to 17 cents per pound; mutton, 8 to 16 cents per pound; lamb, 18 to 19 cents per pound. By this means the farmers can readily sell their meat at a price to almost defy foreign competition, and the results are so far satisfactory. I understand it is contemplated to offer other products in the same way.

**Milling grain.**—Grain is usually sold to millers, who grind and prepare it for market. Until recently most of this has been ground by revolving stones, the idea of this process being to reduce the wheat as suddenly as possible and make the greatest quantity of flour in the operation, but now mills are being erected by which flour is made by the rolling process.

The following description has reference to a new mill in this district:

In the roller system the wheat is ground between cylindrical chilled-iron rollers, and, by a process of gradual reduction, the wheat passing through five or six sets of rollers in succession, the product from the break being flour, middlings, semolino, and bran. The idea is to make the least flour in the reduction of wheat, and the greatest quantity of middlings and semolino, the middlings and semolino being afterwards converted into the finest flour by means of smooth rollers.

It is only by having ample machinery that the best results can be obtained in the new system of milling.

The reducing, separating, purifying, and dressing parts of the process have from a fourth to a fifth more surface than is common in most mills.

The motive power is derived from a 160 indicated horse-power engine, and a large fly-wheel is grooved for the rope-drive, which is said to be a most efficient main-drive. The engine runs at 80 revolutions per minute. The ropes from the fly-wheel drive on the groove-pulleys on the first, or break-roller, shaft. This shaft in turns drives the six sets of double break-roller mills.

The shafts which drive the sets of roller mills are fixed on the bottom floor, and they run very smoothly. On the first floor the roller mills are fixed. The frames are all cast in one piece, which gives them the necessary rigidity. The bearings are 10 inches long, and are oiled by a continuous automatic flow of oil without waste to and from the bearing, and by this process the bearings do not require to be renewed until after two or three years' constant wear.

The cost of converting grain into flour averages about \$3.60 per ton (2,240 pounds) of grain, and the wages usually paid to the workmen employed is \$1.14 per day.

The product from milling a ton of grain is : Fine thirds, 4 per cent. ; sharps, 4 per cent. ; bran, 20 per cent. ; screenings and loss, 2 per cent. ; flour, 70 per cent. The time occupied in the operation varies from ten minutes to one hour, according to circumstances.

*Duties.*—There are no duties whatever on imported farm products, and all countries can place its produce in this market on the same footing (ocean freight and incidental expenses excepted) as that of British production.

CHAS. T. RUSSELL,  
*Consul.*

UNITED STATES CONSULATE,  
*Liverpool, March 10, 1886.*

## INDUSTRIES OF IRELAND.

### REPORT OF CONSUL PIATT.

For a general description of the land in this consular district, with hours of labor, modes of payment, sustenance of laborers, their clothing, &c., I refer to my two reports on labor and wages and on agricultural machinery, dated, respectively, June 25 and July 20, 1884.\*

The customary tenure of land is on lease for three concurrent lives, or for terms of 31, 61, or 99 years.

The average rent per acre for good land is \$6.08. Land for pasture or dairy farming rents for \$9.73; town parks as high as \$24.33. The landlord seldom erects or repairs the farm-houses, &c., and seldom expends any money upon improvements. Under the recent legislative acts regarding land the tenant has the power to tender for the purchase of the landlord's good-will in his holding on a basis to be fixed by the land court.

The principal tools and machines used in agriculture are the common plow, the seed plow, and the harrow, the scythe and cradle sometimes, also the reaper and mower for cutting hay and grain; and the portable thrashing machine worked by horses or steam.

\* Labor in Foreign Countries, Vol. 2, pp. 1001-1021.



Very little wheat is now raised in this district, the importation of American and other foreign wheat having rendered its production unprofitable. That which is yet raised is generally in very small fields, seldom more than five acres upon a single farm. As a rule the wheat is sown upon land from which a crop of potatoes has just been taken. The estimated produce of wheat per acre is twenty-four bushels. This has been the average of the last twenty-nine years in Ireland. The following estimate of the cost of raising, harvesting, and marketing five acres of wheat is one of several estimates furnished to me by practical farmers and others interested in and familiar with the matter in question. I have carefully compared these estimates, one or two of which reached considerably higher figures, and I believe this may be relied upon as a fair one:

Cost of seed at $1\frac{1}{2}$ cwt. per acre or $7\frac{1}{2}$ cwt. for 5 acres, at \$1.94 per cwt.....	\$14 55
1 man sowing same, one day .....	60
5 horses, men, and plows to plow in same, one day, at \$1.46 per horse and man .....	7 30
1 man with pair of horses, one-half day, harrowing .....	1 21
	<hr/> 23 66
Cutting grain at harvest time, 5 men, at 97 cents, one day .....	4 85
10 women binding, at 60 cents each, one day .....	6 00
1 man shocking, one day .....	73
Pair of horses and 4 men stacking, one-half day .....	2 19
Steam thrasher, one-half day, at \$14.60 per day .....	7 30
Coals for engine .....	1 21
Attendance on machines, 12 men, one-half day, at 73 cents each per day .....	4 38
Cost of marketing (if from 7 to 10 miles), 4 horses, at \$1.46 each .....	5 84
Tolls, at 48 cents per ton, say .....	1 70
Sacks (rented for purpose), each holding 280 pounds, including cost of procuring and returning same .....	85
	<hr/> 35 05
Add rent of 5 acres for growing above, at \$7.30 per acre .....	36 50
Add average for rate on same (payable by tenant) .....	1 82
Add county rate .....	1 21
	<hr/> 39 53
Total cost of raising, harvesting, marketing, with rent, &c.....	98 24

This amount (\$98.24) being the cost of raising (5 acres, at 24 bushels per acre), 120 bushels of wheat, the cost per bushel, it will be seen, is about 82 cents. The average price of wheat here this year was \$1.70 per cwt., or about 85 cents per bushel.

The cost of transportation to market by railway from 20 to 25 miles is about 85 cents per ton; from 50 to 75 miles, \$1.70 per ton. Markets are available in any part of the province of Munster within these distances.

A tax or toll of so much per ton in Cork (it is 48 cents) is levied by the market trustees of the city or town to which the grain is taken for sale, for the purpose of defraying the expenses of public employes for weighing the same upon tested official scales. There is no tariff on foreign imports of agricultural produce.

#### WOOLEN MILLS.

The principal works in the south of Ireland for the manufacture of woollen and worsted goods are the Blarney Woollen Mills, Messrs. Martin, Mahoney & Brothers, proprietors, situated at the village of Blar-

ney, about 5 miles north from the city of Cork, and reached by railway (the Great Southern and Western), or by common road from that city.

There are three buildings connected together by platforms leading from the lower or main floor of each, and all are built with due regard to the safety of life in case of fire, and also with proper sanitary arrangements under the laws regulating factories, they being under the inspection of the Government officers periodically.

The mills are worked by steam and water combined of 570 horse-power, as follows: 1 Leffel American turbine, 75 horse-power; 2 English patent turbines (Williamson, of Kendel, maker, Thompson's patent), 75 horse-power; 3 steam-engines (50, 120, and 250 horse-power), 420 horse-power.

The machinery used in the factory consists of 12 sets of woolen cards 10 sets of worsted cards 30 mules, self-acting, 329 spindles each 140 looms; 28 worsted frames; 22 twisting-frames; 6 combing-machines, and finishing machinery to suit.

All machinery is of the newest and most improved description, all manufactured in Lancashire and Yorkshire, England. The driving power is so arranged that the steam or water power can be applied to drive any section of the works in case of the failure of either, caused by short water-supply or accidental derangement of steam-engines.

The price of coal per ton delivered at the factory is about \$4.50.

The nature of the products necessitates the use of a large range of different kinds of wool: Australian, New Zealand, Cape, English, and Irish, about half being Irish and half imported. The latter is purchased at current London and Liverpool prices.

The various kinds of textile fabrics manufactured are: Serges, finest Saxony tweeds, Mangerton (cheviot) tweeds, doeskins, worsted coatings, rugs and shawls, flannels, friezes, fingering worsteds of the highest class, knitting and wheeling yarns.

The trade of the mills is spread over a very wide area, the goods being well known in Ireland, England, Scotland, the continent of Europe, the United States, and all the British colonies.

The total number of hands employed in the mills is 650, of whom 420 are females.

The weekly wages paid for labor amount to \$1,560. The wages of manager, foremen, and heads of departments, dyers, engineers, &c., are about \$243.32 weekly.

In my report on labor and wages made in June, 1884, I have given the rates of wages paid the several classes of employes in the woolen mills of this district; those rates may, therefore, be here referred to in connection with this general statement of the weekly amount paid at the Blarney Woolen Mills. At the time of preparing that report Messrs. Mahony, the proprietors, informed me that their first-class foremen receive from \$9.73 to \$14.60 per week; those of the second class from \$6.08 to \$8.52 per week, while girls and boys received 85 cents, women from \$2.48 to \$2.92, and young men from \$4.87 to \$6.08; the average wages paid to mill hands being estimated at \$2.43 per week. About half their workers, they informed me, were paid by piece-work.

The regular time worked by employes is fifty-six hours per week. The area of floor surface in the Blarney Woolen Mills is 121,629 square feet.

The factory, originally established over a hundred years ago, was completely destroyed by fire in 1869; it was rebuilt in 1870, and was doubled by the addition of a new mill in 1880.

Taxation for poor rates, county rates, &c., costs about \$973.30 yearly.

Soap, oil, and dye wares enter largely into the cost of carrying on a concern of this size, and also gas-light and its manufacture, the proprietors at Blarney making the gas used in their factory. Soap is also made, and the grease recovered from scouring machines is thus utilized with good economical results.

The quantity of finished cloth goods delivered per week is about 10,000 yards, with about 5,000 pounds of knitting and embroidery yarns. About three-fifths of the goods manufactured are woollen and two-fifths worsted. The wholesale prices at Cork of Blarney tweeds (single widths) range from 48 cents to \$1.33 per yard; those of worsted cordings (double width) from \$2 to \$2.90, the best serges (double width) being about \$2.06 per yard. I have failed to get any reliable information as to the return on capital invested, but I am informed by gentlemen interested in and familiar with local Irish industries that manufacturers of woollen goods in this district are contented to receive a very small per cent. of profit, and it is not likely that more than 5 per cent. net profit at most is realized.

The information regarding the Blarney Woollen Mills which I have set down above has been for the most part politely given me by the proprietors. The information sought as to cost and value of buildings, machinery, &c., the amount of capital invested, the amount of insurance, &c., has been politely declined. They seem to think that it is not to their interest to have such facts regarding their private business published.

For cost and mode of subsistence of employes in these woollen mills, I refer to my report on labor and wages.

Writing to me, in answer to inquiries in May, 1884, Messrs. Mahony said:

We have a night school for the young boys and a penny savings bank, depositors in which get 5 per cent. interest on their deposits, but the amount of deposits is limited, and the money is all withdrawn at Christmas in each year. We have also a co-operative shop entirely owned and managed by the workers. In our concern there has been no alteration to note in wages for the last five years, except a perceptible increase all round, but not to a large extent—perhaps 5 to 8 per cent.

They added:

It would be a great boon to Ireland if your great country took it into their wise heads to look upon us, their next neighbors, as entitled to have our manufactures admitted duty free as some return for all the "bone and sinew" we have been so long struggling to rear, and of which they enjoy the first fruits in the prime manhood and womanhood yearly drawn away from us, leaving only the young too young and the old, too old to sustain the old country, Cinderella-like, kept down by her step sisters.

#### HAND-MADE SHOES.

The manufacture of hand-made boots and shoes is yearly decreasing, owing to the large quantities of machine-made work imported from England, as mentioned in my recent report on the shoe and leather industry, which, in the several cities and towns throughout Ireland, finds a ready market, being fully 30 per cent. less in price, though not so durable as the hand-made boots or shoes.

The cost to the retailer of hand-made calf-skin gaiters (Congress) which would sell in store for \$4.38 may be given as follows:

Uppers .....	\$1 58
Sole-leather, &c. ....	1 09
Journeyman shoemaker (one day's work) .....	1 15
<b>Total .....</b>	<b>3 82</b>

The profit, therefore, to the retailer is 56 cents, which, considering the increased demand for the cheaper (machine-made) shoe for an average of 30 per cent. less, does not appear unreasonably large.

From inquiries carefully made of trustworthy persons having a thorough knowledge of the trade, it has been found that, as proof of the great decline in the handicraft, journeymen shoemakers' wages do not average for a week's whole \$7, and this only for first-class workmen, whose wages ten years ago would have reached \$10 for the same labor.

Throughout the country, among the farming and laboring classes, the hand-made work is still that chiefly in use. The class of work is a rough, strong kind, commonly called brogan, the average price of which per pair is about \$3.40, the materials and labor for making which would cost:

Uppers .....	\$0 79
Soles .....	97
Journeyman (one day) .....	85
Nails, &c .....	6
	<hr/>
	2 67

leaving a profit of 73 cents.

#### HATS.

There are a few shops in Cork where hats are manufactured, but the materials—felt, beaver, silk, &c.—are all imported.

The cost of a silk hat which will sell in the store for \$3 is as follows: Material (imported), \$1.25; hatter (1 day's work), \$1.25; total, \$2.50. The profit is 50 cents.

The cost of a felt hat (Derby), which will sell for \$1.50, is: Material, 80 cents; hatter's work, 40 cents; total, \$1.20; profit, 30 cents.

The pay of a journeyman hatter averages \$1.10 per day.

#### HAND-MADE NAILS.

Like the hand-made boot and shoe manufacture, the handicraft of nail-making is fast disappearing. Twenty-five years ago, I am informed, there were in the city of Cork nearly eighty journeymen nailers, whose wages averaged for each man fully \$6 per week (piece-work). Now there are only five or six small shops, with two hands in each, which is entirely owing to the imported machine-made nail. However, for certain kinds of work in the building trade there is still a small demand for the hand-made nail, but the chief demand is for the nails used in the strong boots or shoes called brogans.

The average wages earned by the few nailers in Cork is about \$3 per week.

The nailer will make 2,000 twelve-penny nails in ten hours, which he sells for \$2. The iron costs him 50 cents; coal, 25 cents; total, 75 cents; profit, \$1.25.

#### CROCKERY AND GLASSWARE.

There are a few potteries in the vicinity of Cork, where various articles of clay crockery are manufactured, such as jugs, greenhouse crocks for plants, water-crocks, &c. The clay used for the manufacture is procured in the vicinity, and the trade cannot be looked upon as a very profitable one. The skilled hands earn about \$4 per week (boys receive about \$1), and the receipts per year of a certain pottery where fifteen hands are employed average about \$2,600, on which the profit to the proprietor is about 45 per cent., this being his own compensation for time, personal superintendence, &c.

There are now no glass manufactories in Southern Ireland, all glassware being chiefly imported from England, Scotland, and the continent of Europe.

#### MINES.

There are not any mines worked at present in this district for the purpose of raising ore, and therefore smelting furnaces are not necessary. The iron and other metals used here, coming from England in pigs, are wrought and melted at the local foundries for the required purpose. The mines, copper and iron ore, for many years in operation at Castle-town Berehaven, have within the past year been closed for want of capital. Smelting was carried on in connection with these mines.

#### TIMBER AND MANUFACTURES OF WOOD.

There is a plentiful supply of oak timber grown in Southern Ireland. It is principally used in ship-building yards for frames of vessels, &c. The average price is 45 cents per cubic foot. Elm is also plentiful, and is chiefly used in making wagons, carts, wheelbarrows, felloes, spokes, &c., the average price being 28 cents per cubic foot. Ash is also a timber largely grown in Southern Ireland, and is chiefly used in the manufacture of farming implements. The supply is largely in excess of the demand, the price being about the same as that of elm.

#### FARMING IMPLEMENTS.

The American plow and thrashing machine, as I have heretofore reported, are largely used in this district.

The harrow and common plow are manufactured in Ireland. The American-made implements are not imported direct to Ireland, but are all supplied through English and Scotch houses. The cost of an Irish-made harrow, which is very heavy, is about as follows:

Timber .....	\$3 89
Iron .....	3 65
Carpenter, two days, at \$1.21 per day .....	2 42
Blacksmith, two days, at \$1.21 per day .....	2 42
	<hr/>
	12 38

JOHN J. PIATT,  
*Consul.*

UNITED STATES CONSULATE,  
*Cork (Queenstown), April 20, 1886.*

### GERMAN TRADE IN MEXICO AND CENTRAL AND SOUTH AMERICA.

#### REPORT OF CONSUL GOODWIN.

#### COLONIAL SCHEMES.

The German press during the last few days has devoted considerable space to comments upon the doings of the colonial congress which has just closed an interesting session in Berlin. There is a difference of opinion among well-informed men as to the wisdom and practical value of Germany's colonial policy, but the preponderance of sentiment is to the effect that the efforts thus far made to acquire new territory and ex-

tend the influence of Germany therein have been successful to a considerable degree, and give assurances of great advantages in the future.

It appears from papers read at the congress by German explorers and others directly interested in these colonization schemes that Germany is now "cock of the walk" over some 375,000 square miles of territory in East and West Africa and the South Sea. These lands have not been purchased or secured by treaty, but have been "appropriated," a very simple process of securing additional territory, long in vogue among the civilized nations of Europe, but only until quite recently adopted by Germany. It is admitted that the new possessions in West and South-west Africa are of little present practical value and offer no inducements to immigrants, but it is claimed that in East Africa and New Guinea Germany has secured valuable acquisitions—sections of country whose climate is unsurpassed for healthfulness, and whose natural resources are rich, varied, and abundant.

But while the praises of African colonization are being sung in some quarters, discordant notes are heard from others, and I wish particularly to call attention to a very earnest communication which appeared in a late number of the "*Kaufmännische Blätter*," an organ of trade and commerce published in Leipsic. The writer, Herr Evald Paul, complains of the alleged short sightedness of the German policy, which he says, is abnormally raising the power of production without a corresponding effort to increase the power of consumption. In other words, he argues that a great ado has been made over acquisitions of African territory, much of it worthless to Germany; that the attention of manufacturers and exporters has been drawn thither, and every householder in the Empire made to feel that his furnishings are incomplete without a plaster-of-paris or bronze figure of a Hottentot, while other territory, more important to commercial Germany, easier reached, and easier to make money in, has been neglected. He refers to Central America in general and Mexico in particular.

I shall quote at some length from his article, which I have translated, because it must be interesting to American manufacturers and to all persons interested in the extension of American trade, in more ways than one. It will serve to enlighten many of our people who have been led to suppose, from much that has been said and written, that Germany had a hold upon the trade of those countries that could scarcely be broken, and it will also be useful because of the hints contained in it, which should lead Americans to redouble their efforts to secure what ought to be theirs, viz, two-thirds, or at the least one-half, of all the trade with Mexico and Central America. Herr Paul writes as follows:

What have we done in Mexico, one of the most blessed and beautiful countries on the face of the earth—a country which since the sixteenth century has produced more than 300,000 kilos of gold and nearly 100,000,000 kilos of silver, some 15,000,000,000 marks worth of which has been brought to Europe—a country offering the products of the tropics as well as those of northern climes, containing lands of surpassing richness, scarcely one-eighth of which has been put to till? Such a territory seems about to fall into the hands of the "Yankees," which is almost equal to an exclusion of our interests. The people of the United States are a speculative people, and as they push over the Pacific to the east so they tend toward the south, and have the best opportunity on their own continent.

The Mexicans do not like the "Yankees," as they know the dangers which threaten them from "Yankee" invasion; but they endure them, knowing that they bring business and money. Mexico, after having for many years been prevented from developing her resources in peace, at length enjoys the needed repose. The "Yankees" take advantage of this, and already have succeeded in doing what the Mexicans were not able to do for themselves. Mexico is fast being covered with a network of railroads, and telegraph and telephone lines are being stretched over city and

town. In large cities gas and even the most brilliant of electric lights have been introduced. Tramways are everywhere found, new inventions and improvements are being made on every hand, and if you ask to whom is Mexico indebted for all this the answer is, to the "Yankees."

The French capital that before and during the days of Maximilian figured in Mexico is driven away and much English and German capital likewise. The "Yankees," with their money and enterprise, have pushed themselves into the places once filled by Englishmen and Frenchmen and Germans, and we, while making a feeble effort to hold our own, have not the nerve to launch into greater and harder enterprises, which in the end would prove remunerative enough to more than pay for all the money and energy invested. And it may be even worse for us, and for Mexico as well, when additional railroads are completed across New Mexico and Arizona into Mexico. Then the "Yankees" in unlimited numbers will rush upon the young Republic, which already they have begun to unnaturalize, and will very likely completely subject it to their dominion. Its riches are well known to them, and so are all of its advantages, scarcely any of which the Mexicans have turned to a proper use. The latter wait for foreigners. Why cannot it be the German? Why do we not bestir ourselves, and offer to the Mexicans German science, German culture, and German industry? Give German strength to it and Mexico will richly reward us, but if free hand is much longer given to the "Yankees" they will complete the ruin of the Mexican Republic. If railroads are established, the tide of emigration from the United States will begin to set in strongly; the "Yankee" speculator will be followed by the "Yankee" farmer, the "Yankee" merchant, and the "Yankee" machinist; the settlers will push farther and farther into the heart of the country; the English language will corrupt and gradually supplant the Spanish; and almost before we are aware of it the peaceable conquest will have taken place. Mexico will then belong to the "Yankees," and Europe will be the poorer for the loss of an extensive market.

I consider it my duty to call attention to the danger threatening our commerce and industry in foreign countries through "Yankee" competition. Mexico is not the only territory that will be torn from us in this way, unless we are careful and energetic. Just now, with Mexico fairly entered upon an era of tranquillity and development, is the time to make German influence felt over there. I earnestly recommend the founding of German museums of commerce in all of the important commercial towns of the Republic and the speedy establishment of a German chamber of commerce in the city of Mexico. I also urge the sending of a clever man—one who knows geography, commerce, and politics well—whose duty it shall be to make a thorough economical exploration of the country. Our Government would surely not be indifferent to such endeavors, but rather would strive to promote them in every possible way. At this moment I have before me a report of the Austria-Hungarian Export Society, in which the fact is mentioned that a Vienna merchant is traveling in Mexico in order to form new business connections, and that he has met with good success, having already sent orders from Mexican firms to fifty Vienna houses. Perhaps this brief item will serve to induce German manufacturers and exporters to turn their eyes for a moment from our African conquests, and to exert themselves to increase our trade with Mexico and its neighbors. At all events it is to be hoped that I have not written entirely in vain.

#### EXPORTS OF GERMANY TO MEXICO.

Exact figures showing the exports of Germany to Mexico cannot be had, the authorities refusing to supply them to representatives of foreign countries.

In his special report to Congress in 1883, Secretary Frelinghuysen stated that the principal countries holding commercial intercourse with Mexico were the United States, Great Britain, France, and Germany, "the trade statistics of each with Mexico being available, with the exception of Germany." In that report the exports of all countries to Mexico for the year 1880 were placed at the value of \$30,000,000, of which \$2,000,000, considered a very liberal allowance, was placed to the credit of Germany. For the same year the exports from the United States amounted to \$11,191,000; from Great Britain, \$6,235,000; from France, \$5,195,500.

It was also shown that between 1877 and 1880 the exports from the United States to Mexico increased more than 100 per cent.; of British

goods about 23 per cent., while the exports of French goods showed a slight falling off. For the years 1882, 1883, and 1884, according to the American Almanac, whose tables were "compiled from the annual statements of commerce and navigation of the United States," our exports to Mexico in those years amounted to \$15,482,582, \$16,634,584, and \$12,704,292 respectively. The figures for 1885 I have not at hand, but judging from the above showing and from the cries of distress going up in Germany, our manufacturers and exporters are continuing their onward march. But I would urge them to greater activity and more careful endeavors to conform to the tastes of those to whom they export. They can profit no doubt by watching the tactics of their European rivals, who are now struggling desperately for commercial supremacy on the western continent.

There are two excellent newspapers published in the city of Mexico which are devoted to American interests, and our exporters will find much valuable information in them. These are the "Two Republics" and the "Mexican Financier," the latter conducted by Mr. Frederick R. Guernsey.

#### CENTRAL AMERICA.

The condition of trade with Central America is also attracting fresh attention in Germany just now. One of the leading trade journals of the Empire in its current issue devotes a column of its space to a synopsis of the report of a commission sent by the United States Government to Central and South America to ascertain means for enlarging our trade in those sections. This journal comments freely upon the proposals and suggestions of the commission and concludes in these words:

Taking into consideration the remarkable agility of our American competitors and the growing increase of their trade, it is scarcely to be doubted that they will within a short time secure a much larger portion of the trade of the Central and South American countries than they now have. Whether that portion will soon amount to two-thirds, as the committee hope, in case the means suggested by them are put into execution, remains to be seen. But the German manufacturers who now command so large a share of the trade must, even if they would hold their own, keep their eyes wide open, and use every endeavor to prevent American progress. Especially should they take to heart what this American committee has to say about conforming to the tastes of the buyers in the different countries to whom goods are exported.

It would seem that if there is anywhere a chance for a great increase of our trade that is to be found in Central America. It is a shame that these neighbors of ours should year after year buy from and sell to Great Britain more than twice as much as they buy from and sell to us; and it is a greater shame that Germany, which lacks the strong advantage that Great Britain has over us, should control as large a trade with those countries as she does. The figures, which I take from the same source as those relating to our trade with Mexico, make this rather discreditable showing for the United States.

#### *Trade of the United States with Central America.*

Description.	1881.	1882.	1883.	1884.
Exports from United States .....	\$1,626,000	\$1,644,013	\$2,027,735	\$3,177,863
Imports to United States .....	8,100,000	4,785,331	5,121,315	6,161,221



## SOUTH AMERICA.

Germany is pushing her trade with South America with great vigor. A South American exhibition is now being held in Berlin under the auspices of the Central Association for Commercial Geography, which is but one of several private societies, so called, but which the Government stands behind and supports in all their endeavors to "appropriate" territory or increase German trade and influence abroad. At the opening of this exhibition an address was delivered by Dr. Jaunasch before a large audience, one of the number being the minister of state, von Boetticher. The exhibition is extensive, consisting of a great variety of the manufactured and natural products of South America, especial attention being paid to Brazil and Argentine. The exports of Germany to Brazil are chiefly machinery, paper, hard ware, cotton and woolen goods, steel goods, musical instruments, and weapons. Her imports are coffee, hides, horn. spirits, gold, and silver.

Just now the Germans are bending their energies particularly toward the development of trade with South Brazil, but they are not neglectful of their interests in other parts of South America. One of their latest proposals is to establish a bank in the Argentine Republic, to be a branch of the Deutsches Bank, and this will probably be done in spite of the opposition of the French, who seem to look upon the La Plata region as theirs by some sort of right, and who are shocked beyond expression at the presumption of their hated rival.

In the stupendous project for a canal through Solado, Vecino, and other now useless swampy portions of Argentine, which it is believed would result in the reclamation of vast tracts of land that would become richly productive, the cunning hand of Germany is seen. The cost of this undertaking is estimated at \$40,000,000, all of which it is proposed to raise in Europe.

Germany is no longer under the necessity of playing second fiddle to any foreign country in the matter of reaching South or Central America with her goods. Her own fast and staunch steamships now run to all the leading ports on the eastern coast of America.

Three lines run to the United States, the North German Lloyds dispatching regularly to New York and Baltimore, and the Hamburg-American Packet Company to New York.

Six lines touch at Central American ports, viz, Hamburg-Vera Cruz-Tampico, in 30 days; Hamburg-St. Thomas-Colon, in 29 days; St. Thomas-Haytien ports, in 12 days; St. Thomas-St. Domingo, in 11 days; Hamburg-Carthagena, in 34 days; Hamburg-Haytien ports and Colon, in 29 days.

To South America five lines are now running regularly, viz, Hamburg-Buenos Ayres, in 30 days; Hamburg-Callao, in 65 days; Bremerhaven-Buenos Ayres, in 33 days; Bremerhaven-Santos (Brazil), in 39 days.

In conclusion, I would impress upon our people that while we are making rapid strides in Mexico, we are capable of doing far greater things, and such signs of distress as the letter of Herr Paul to the "*Kaufmännische Blätter*" should not throw us off our guard in the least, but incite us to greater activity and watchfulness. The Germans were pleased at the rejection of the proposed treaty of the United States with Mexico, not because they were, generally speaking, acquainted with its details, but because they took it for granted that it was intended to make freer intercourse between the two Republics, and would help on what Herr Paul calls "the ruin" of Mexico. They are pleased at every

little outbreak on our Mexican border, simply because they expect such occurrences to create unfriendly feelings and distrust between Mexico and the United States and inure to their advantage. As to our tariff, there can be no doubt that they are satisfied to have it remain as it is.

GEORGE B. GOODWIN,  
*Consul.*

UNITED STATES CONSULATE,  
*Annaberg, Saxony, September 25, 1886.*

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## THE TOBACCO CROP IN GERMANY.

REPORT OF CONSUL GOODWIN.

I may say of the German tobacco crop that so far as quality is concerned and yield per acre it is expected to make a good showing this season. The gradual decline in this industry continues to be noted, however, and the number of planters and number of acres under cultivation will become smaller and smaller year after year as long as the agitation for Government control of the industry is kept up. I have recently traveled through the tobacco districts of Baden, the most important in the Empire, and was surprised at the extent of the crop, and more particularly at its fresh, hardy appearance. About 600,000 acres are under cultivation in Baden, and an unusually large acreage in the Pfalz district. The reports received by Kuhlows Trade Review state that the plants are remarkably strong, but not of a quality to be used for the manufacture of cigars. It must be chiefly used for smoking in pipes. Prices rule low, except for old fine stock, for which they are high, the supply not being equal to the demand.

The tobacco market at Strasburg has been very quiet for some months. There were about 3,000,000 pounds on hand on the 1st of July, mostly held by speculators, who are liable to get badly pinched if they try to realize now or in the near future. The only large sale made of late was one of 2,000,000 pounds to the French Government at 9 cents per pound, or thereabouts.

GEORGE B. GOODWIN,  
*Consul.*

UNITED STATES CONSULATE,  
*Annaberg, Saxony, September 28, 1886.*

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## PETROLEUM WELLS IN FRANCE.

REPORT OF CONSUL DUFAIS, OF HAYEE.

Several French newspapers lately published a dispatch of the 15th of August from Clermont-Ferrand in Auvergne, France, that petroleum had been discovered there on the property of Mr. Arband, and that several gallons had been sent to the School of Mines at Paris for analysis, which had been pronounced of first quality.

In view of the importance of such a discovery for this country, France being one of our largest customers for petroleum, I wrote to the mayor of

Clermont-Ferrand for further information. He wrote in answer simply that the municipal council of his town had, on the 19th August, authorized an engineer, Mr. Arbans, to make searches for petroleum on municipal property called "Le Puy de Poix," and that furthermore an independent company for the same purpose had been formed with \$100,000 capital, and M. Viscount de Case as president of this company (whose prospectus I inclose in translation), having its seat at Paris and Clermont-Ferrand. I asked for information, and I now beg to transmit a copy and translation of their answer, from which it would appear that the news as published in the papers in rejoicing terms, and prognosticating a speedy independence of imports of foreign petroleum, is at least premature.

F. F. DUFAIS,  
*Consul.*

UNITED STATES CONSULATE,  
*Havre, France, September 15, 1886.*

#### GENERAL COMPANY FOR SEARCHES AFTER PETROLEUM.

Civil society for searching after petroleum bearings (*gisements*), capital 500,000 francs (\$100,000), in shares of 125 francs, by act deposited with Mr. Renon, notary. Clermont-Ferrand, Place de la Chapelle de Fande, 10; office at Paris, rue Cambon, No. 26.

Board of administration: The Viscount de Case, late administrator of mines, Rochelamotière, president; Lautier, landowner, Paris; Ricarde-Seaver, ex-inspector-general of mines, Paris; Lemaitre, formerly notary, landowner, Chamalières; Bertrand Pavy, merchant, a proprietor at Leroux (Puy-de-Dôme); F. Rorex, engineer-hydroscope, Clermont-Ferrand, director.

#### EXPLANATION.

Recent investigations in the rich soil of the Limagne d'Auvergne have convinced competent men of the existence of petroleum. The Limagne d'Auvergne forms an immense basin showing the best conditions for the best formation of a coal bed, and the area from the railroad station of Vic-le-Comte, Pont de Longues, to Randan, and from Riom to the Dore, is not less than 180,000,000 square meters.

The coal basin of the Limagne could not be swept out on account of the resistance of veins of porphyrous rock crossing the Allier from St. Pourcain to St. Germain-des-Fossés, so that the primitive rocks of small depth in the Allier near Randan retained the coal element covered by lacustrine matter as well as the calcareous matter which covered these grounds.

Geological study has convinced engineers that this area concealed considerable beds of bitumen, asphalt, coal, rock-salt, and petroleum.

The natural gas which escapes from the soil and the oozing of petroleum at low water induce the expectation that it is impossible scientific data should not be confirmed by the result, viz, the presence of petroleum.

The bitumen of Chamalières, Malintrat, Lussat, Pont du Château, &c., is well known. At Puy de Poix crude matter and salt water (a proof which exists everywhere of the presence of petroleum) ooze out in abundance.

These are therefore palpable proofs of the reality, and bearing in mind that the configuration of the basin is absolutely identical with petroleum-producing basins in Pennsylvania (as easily seen by geological inspection), it is but logical that a society for boring for petroleum was formed, and, in case of success, for working the rich bearings believed to exist in the subsoil of the Limagne of Auvergne. It is intended to make two borings until a depth is reached indicated by the declivity of the different geological strata, of, say, 500 to 600 meters (about 1,970 feet).

This enterprise of a large society for the purpose of searching for petroleum was very necessary for France. The founders of it, who have foreseen this result in the basin of the Limagne, will solve this problem, which, whilst increasing our national prosperity, would make France independent, at least partially, of America, and would prove to all interesting themselves in this enterprise a veritable source of fortune. The original subscribers to the capital of the company will in little time see their investment increase not ten times but a hundred times.

Everything indicates that success in the search of petroleum will procure for France a source of commercial activity equaling that of the United States, to which we pay a yearly tribute of 250,000,000 for petroleum, and whose export of petroleum to Europe exceeds 30,000,000 barrels, their industrial establishments proving of an importance unknown in our old Europe.

We will only mention the United Pipe Line Company, which owns 6,000 kilometers (3,750 miles), 2,500 tank cars, and transports daily 225,600 barrels of petroleum.

The inexhaustible wells of America produce, Oil City, 4,000 barrels per day; Karns City (Christie Well), 6,000 per day; Canada (Piero and Cranie), 9,000 hectoliters.

Baku produces about 20,000,000 barrels petroleum per annum. This production furnishes, in the Caspian Sea, on the Wolga, and in the Black Sea, 100 steamers with fuel. In Canada, also, the railroads use petroleum. At Baku there is a well producing daily 400,000 poods of petroleum of the value of 287,500 francs a day.

We are protected by an import duty of 18 francs per 100 kilograms; transporting expenses from America to French ports add another 12 francs per 100 kilograms; we have, therefore, a net profit of 30 francs per 100 kilograms guaranteed to us over that realized in America. Such differences do not require commentaries; the eloquence of figures is conclusive.

The net profits to be realized after deducting interest, working expenses, and sinking fund, &c., are as follows: For 20 barrels per day a dividend of 50 francs per share of 125 francs; 100 barrels per day, 270 francs; 400 barrels, 1,100 francs; 1,000 barrels, 2,785 francs.

The *Journal des Débats* of the 5th September, 1885, gives an account in the following terms of an experiment which appeared conclusive to the editor:

"A few days ago, on board the *Aube*, belonging to the Traissinet line at Marseilles, a new trial of burning the refuse of petroleum was made; during the trial, which lasted 5 hours, the average consumption was 115 kilograms of petroleum refuse (residuum) per hour, against 291 kilograms of coal under exactly the same conditions. The petroleum, therefore, gave a result 74 per cent. better than coal. In the maritime world these experiments are the great event of the day, especially with our new marine. The problem of the suppression of coal and the substitution of petroleum is thus solved. The impetus is given, and it can be foreseen what immense place petroleum is called to take in our economic and financial system."

What is the product to be extracted from the bowels of the earth richer in application in so many ways than petroleum, which we have every reason to expect finding in abundance in the ooze of the Limagne of Auvergne?

The learned professor at the faculty of sciences of Clermont-Ferrand, Mr. Truchot, enumerated them lately in a lecture on petroleum, from the oil for lighting, paraffine, vaseline, residue of coal tar to lubricating oil.

"It is not hazardous to affirm," said he in concluding, "that its use will rapidly extend; industry and domestic economy will demand from it more and more light, heat, force, or power, or the agents by means of which man obtains his power in using the elements which the Creator has placed at his disposal."

What a future is thus in store for us, if, as everything leads us to expect, we find petroleum wells in France—petroleum which would be free from the enormous entry duty, of the considerable transportation expenses like those coming from America. This difference alone would represent a handsome profit.

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CLERMONT-FERRAND, September 11, 1886.

MR. CONSUL: We have received your letter of the 9th and hasten to reply to it.

Mr. Arbaud is not a member of our company. We do not think that he has discovered anything on the Puy de Poix, not mentioned in our prospectus, of which the mayor has sent you a copy.

We thank you for the obliging offer of your services and beg you to receive the assurance of our distinguished consideration.

The president of the council of administration,

VISCOUNT DE CASE.

**THE PITA FIBER OF HONDURAS.****REPORT OF CONSUL BUCHARD.**

The pita plant (botanic, *Ananassa*), called "silk grass" in English, belongs to the same order as the pineapple. It has never been cultivated, but is found growing spontaneously in the vicinity of the sea-coast, on the margins of rivers and lagoons, and also on the highlands below an altitude of 2,000 feet. It is very abundant and prolific. It grows in patches of various dimensions, some of which contain not less than 100 acres. Where it takes possession of the soil it spreads rapidly and kills all other vegetation except large trees. Each plant or sucker has from 30 to 50 stalks which measure from 5 to 12 feet each in height and from 2 to 3 inches broad. The fiber is contained in the center of the stalk in filaments running through its entire length. The outside bark, covering the fiber, is hard and very tenacious.

**MODE OF EXTRACTING FIBER.**

The Indians place each stalk upon an oval slab and scrape off the bark which covers the filaments with the sharp edge of a split bamboo. It is a slow and laborious process, which yields on an average not more than one pound of clean fiber per day to each man or woman. The Caribs keep the stalks in water until the bark becomes partially decomposed when it can be rubbed off quite easily, but this process is said to injure the strength of the fiber.

In recent years many attempts have been made by foreigners to extract the pita fiber mechanically. A variety of machines have been invented for that purpose. Grants of territory and exclusive privileges have been obtained from the Government of Honduras to work the pita fields, and large sums have been expended in planting machinery and other preparatory works. In every instance such attempts have failed, owing entirely to the fact that no machine or process has yet been invented that will extract the fiber from the pita plant on a scale sufficiently large to make it profitable.

**USES OF THE PITA FIBER.**

In this country it is in general use for thread, especially for sewing boots and shoes, for nets, fish-lines, halters, and the best quality of cordage. The most beautiful hammocks are also made of pita, some of which are sold at home as high as \$50 each. Samples of this fiber have been sent to the United States and to Europe, which have been manufactured into a variety of articles, such as handkerchiefs, laces, ribbons, wigs, false hair, &c. It is claimed that it can be successfully employed as a substitute for either silk or linen. Every manufacturer who has experimented with it has been so well satisfied with the result as at once to be willing to contract for large quantities.

A splendid fortune awaits any man who will invent a machine that will decorticate the pita plant rapidly and effectually. It does not seem to be a difficult undertaking, but the inventor should come here, and make his studies and experiments on the ground where the plant is growing. I have seen pita decorticated in a satisfactory manner in New York, a few stalks for each trial, by a machine which, when placed in

operation in this country, proved a miserable failure. I would not again have faith in any process for cleaning this fiber until its success should be practically demonstrated on the soil where the plant exists.

#### COST OF THE FIBER.

It can be purchased of the Indians in the backwoods, nicely prepared in rolls or skeins of about 12 ounces each, for 25 cents per roll.

In the cities and towns of the interior it is sold in small quantities to shoemakers and others for \$1 per pound.

The cost of preparing it for market by the native system is too great and the quantity prepared too small for it to become an article of export. With suitable machinery thousands of tons could be extracted from the wild pita fields of Honduras, and when these are exhausted it could be cultivated with the greatest facility. There can be no doubt that this valuable fiber is destined to become a very important element in the future commerce and industry of this country. I will forward to the Department some (specimens) samples of the fiber as prepared by the Indians and also some leaves and growing plants as soon as they can be obtained from the mainland.

The New York and Honduras Fiber Company, after spending a large amount of money, was obliged to give up their enterprise because their fiber machine was a failure. Their plant, including an engine of 25 horse-power, a saw-mill, a steam barge, and a large assortment of tools and fixtures, is still at Black River, in this district, practically abandoned.\*

WM. C. BURCHARD,  
Consul.

UNITED STATES CONSULATE,  
Ruatán, September 10, 1886.

[Extracts from a pamphlet issued by the New York and Honduras Fiber Company, 1882.]

#### THE PITA PLANT.

The pita or silk grass of Central America, technically known to botanists as *Bromelia sylvestris*, which is attracting so much attention from capitalists and manufacturers as a valuable fiber-producing plant, is indigenous to the soil of Honduras, and grows spontaneously in large quantities along the banks of the rivers and lagoons and upon the uplands. The fiber is in the leaves, extending the whole length from base to tip. When extracted from the leaves and cleansed this fiber resembles manila hemp, differing, however, from hemp in several particulars, and these differences constitute its superiority over that article. For while it may be regarded as the rival of hemp in strength and durability, experiment demonstrates the almost infinite divisibility of each and every strand; nothing, therefore, is needed to set free the component threads but an inexpensive solution of the gum which holds the strands together. The importance of this fact a moment's consideration will serve to make plain. It may be woven like silk or linen. It may be mixed with either without impairing the strength or finish of the fabric, and the uses to which it may be put are practically without limit. Handkerchiefs have been made of it, beautiful in gloss and texture, also hammocks and fish-lines, thus evincing its wide and varying utility. This fiber has been dressed or cleaned by the natives of Honduras, but never exported nor made an article of commerce, for the reason that the methods employed by them were rude, slow, and laborious, and the amount obtained did not more than suffice for their own immediate wants.

The pita plant (*Bromelia sylvestris*) is found in profusion throughout the entire section over which I have traveled, growing with greater luxuriance, and covering larger areas in sections adjacent to the lagoons and rivers. As one advances among the mountains it is still found, though not in such abundance nor of so large a growth.

\* See a report by Consul Burchard on "Balata Gum and silk grass of Honduras," printed in Consular Reports No. 10, August, 1881, p. 210. For *jute* in that report, read *pita*.

Its natural production, in the largest quantities, happens therefore fortunately to be where it is easiest of access and nearest to facilities for transportation. From Roman River to Little Rock the strip of level land along the coast is comparatively narrow, but a few miles in width at the most, while at Big and Little Rock the rocky high-land juts immediately upon the sea. From Little Rock eastward the bottom lands immediately broaden, and with the Sangrelaya River, which empties into the bight of Hiriona, begins that remarkable system of inside water communication by river and lagoon, which adds so incalculably to the value of this section of the grant. And here it is that the pita plant grows in the greatest abundance and luxuriance directly adjoining the lagoons and their tributary arms and creeks, and on the banks of the rivers.

There are extensive growths of the plant along Black River of easy approach from the river as far as navigation is practicable. From the Sangrelaya to the Plantain River, and extending from the sea to the mountains, pita is to be found in practically inexhaustible quantities. The only limit to production will be the number of men and facilities employed in collecting. There are thousands of acres ready to be cut. The soil is unfailing, and the cutting of the plant, together with the removal of such vines and undergrowth as may exist, acts as cultivation and adds greatly to the rapidity and luxuriance of its growth.

The plant propagates readily by means of shoots or running suckers, and those fields which are most conveniently situated, with but little attention may be led to extend themselves to any desired size.

The mouth of Black River has been selected as the central location for the company's works, as being in the middle of the largest pita-growing area and as possessing the most complete facilities for communication by water throughout the whole section. Here it is also that the pine ridges and high ground reach down to the sea, making this without exception the healthiest point along the coast within the limit of the company's grant. The engineer of the company is now situated at this point, engaged in the putting up of shelter and storehouses, and in the collection of pita.

In this connection it remains only to say that repeated experiment has shown the loss in weight from green leaves to clean fiber to be 80 per cent., 5 tons of green leaves producing 1 ton of clean dry fiber. Also that it has been demonstrated that the expense of cutting and delivering the green leaves at the company's works need not exceed \$2.50 per ton.

## MINING REGULATIONS OF CANTON.

### REPORT OF MINISTER DENBY.

The viceroy of Canton, his excellency Chang Chi-tung, has lately issued a series of important regulations relating to mining.

A capitalist desiring to open a mine must find out "the height of the mountain and the area of its surface." If it is Government property he must find out what taxes are payable on it. If it is private property he must arrange to buy or lease it. He must then send in his petition with a statement of all the facts to the board of mines, which consists of the high officials who compose the provincial board of reorganization, with the addition of expectant Taotai Páng. The board will send an inspector to the spot, and if it is found that the proposed mine will not interfere with any dwellings or graves, and the proper fees have been paid, permission will be granted to open the mine. A fee of \$500 must accompany the petition "as a guarantee of good faith," and a further fee of \$500 must be paid when the petition is granted. The owners of existing mines must pay \$1,000, so as to put all on an equal footing. In two months the work in mines near Canton must commence, and in three months for more distant mines. Feng Shui will certainly be invoked by the people. The board will therefore send inspectors to report whether dwellings or tombs will be injured, or whether the opposition is captious. This Feng Shui is a curious superstition, which regulates all building. All means are taken to have it propitious and to prevent the access of hostile spirits. Sickness and death are generally ascribed to Feng Shui, or the disregard of it. The feeling seems to be universal with men of all classes, and is always invoked to promote riots against foreigners. It is very difficult for them to build a house so as to avoid

the Feng Shui superstition. Local magistrates are to be rewarded when a rich mine is discovered.

The people employed in the mines must belong to the district in which the mines are situated. The mine owner must be careful in employing miners, who must be of good character. "Disbanded soldiers and Christian converts" cannot be employed in the mines. This clause as to disbanded soldiers is singularly illustrative of the want of tact of Chinese officials. China claims that Chinese Christians are still her subjects. How then can they be lawfully excluded from any work? Official tallies are to be issued to miners so as to exclude the two prohibited classes.

In the fifth section of the regulations the announcement is made that China requires coal and iron for her arsenals and ship-yards, and that "China will, in the future, have to make railroads."

Want of practical knowledge is shown in the provision that each mining lot is to measure 15 li in every direction, which will give each concession an area of nearly 80 square miles, within which no other capitalist can take up a mine. This idea is relied on to prevent difficulties among the miners at the various mines. Foreigners are prohibited from owning stocks in mines, but their services are to be secured to open and operate them. The foreigners so employed will be protected, but can engage in no other business. Soldiers may be employed by the mine owners to protect the mines. An official appointed by the board but paid by the mine owner will be stationed at the mines to oversee the returns of royalties and yield.

Great care must be taken to avoid injuring graves.

Original shareholders cannot sell their shares to foreigners or Christians or Chinese subjects in the employment of foreigners.

CHARLES DENBY.

UNITED STATES LEGATION,  
*Peking, August 17, 1886.*

## FOREIGN COMMERCE OF JAPAN.

### REPORT OF MINISTER HUBBARD.

During the eighteen years, 1868-1885, the lowest value of exports was in 1869, when they amounted to less than 13,000,000 yen, while during the last five years they have never fallen lower than 30,000,000, reaching the highest figures in 1882, when they amounted to over 37,000,000, and in 1885 being about 1,000,000 less.

The import trade of Japan in 1868 showed a total of over 10,000,000, reaching the highest figures in 1880, over 36,000,000, and coming down last year to less than 29,000,000.

The imports for twelve of the years noted showed a large excess above exports, while the reverse is shown for the years 1868, 1876, and 1882 to 1885 inclusive. Still from 1868 to 1885 inclusive, the total imports exceeded exports in round numbers over 51,000,000 yen. Of late years there has been a large excess of exports over imports, the amount of this excess being for the last four years nearly 28,000,000.

The specie and bullion exported from 1872 to 1881, inclusive, show an excess over imports of about 70,000,000, while the four years from 1882 to 1885, inclusive, showed an excess of imports of nearly 8,000,000.

The exports of raw silk was in 1868 over 6,000,000 yen, and in 1885 over 13,000,000, reaching in 1882 and 1883 over 16,000,000 during each year, being in 1870 a little over 4,000,000 in value.



The total exports of tea in 1868 was over 3,000,000 yen, against nearly 7,000,000 in 1875. While the *quantity* has largely increased, the *value* has not increased in proportion; but the price of this commodity has fallen considerably.

The exports to the United States in 1873 (the figures prior to that time not being given) amounted to less than 5,000,000, and reached the highest figures in 1885, when they went to over 15,000,000 in value.

The value of commodities imported into Japan from the United States has increased from about 1,000,000 in 1873 to very nearly 3,000,000 in 1885, the greatest value of imports being in 1879, when the figures reached very nearly 3,500,000. The value of kerosene imported in 1869 was only about 1,600 yen, while in 1879, 1882, and 1883 the amount for each year was over 2,000,000, and over 1,500,000 in 1884 and 1885.

RICHARD B. HUBBARD.

UNITED STATES LEGATION,

Tokio, Japan, July 19, 1886.

### PREPARATION OF TEA IN JAPAN.

REPORT OF CONSUL JERNIGAN, OF HIOGO.

Tea and rice are to Japan what cotton is to the southern portion of the United States of America.

Failure in either of these crops often disarranges business and causes financial disasters in the countries where they are the chief products. Japan is favored this year with excellent tea and rice crops, and the *modus operandi* of preparing the former for market, with illustration or drawings of the same, will form the subject of this report, prefaced with a brief history of the tea plant and with subjoined statements showing the quantity of tea exported, with the different grades and prices at the opening of each season for the past five years.

Tea was introduced into Japan from China, and reliable authority fixes the date of its importation during the ninth century. The first mention of it is in the reign of the Emperor Kuanmu, when a priest named Saito brought the seed from China and had them planted at Uji. But it was not, however, until the twelfth century that the tea shrub came to be appreciated in Japan. The earliest mention of tea by an Englishman is to be found in the "Diary of Richard Cocke," the agent of the honorable East India Company at Firado (Hirado), 1615-1622.

For a long time tea was an expensive luxury, only to be indulged in by the nobles. Kaempfer, in his history of Japan, describes how the tea used at the imperial court was then grown and prepared at Uji, under the care of the chief purveyor of tea, and that for at least two or three weeks before the gathering of the leaves the persons who were to pick them were prohibited from eating any unclean food, such as fish, lest their breath should contaminate the leaves, and how, during the gathering season, they had to wash themselves twice or three times a day, and were not allowed to touch the leaves except with gloved hands.

Tea is now grown throughout Japan, but Suruga and the adjoining province of Totomi are two of the principal producing districts in Japan.

Drawings Nos. 1 and 2 show the different varieties of the tea-plant in Japan, one being long leaved and the other short. The stem is bushy, with numerous and very leafy branches. The general height of the plant is from 3 to 4 feet. To grow it higher would make it inconvenient for picking. When in the third year of its growth it bears leaves ready for picking, and is considered at its best from the fifth to the tenth year, though age does not deteriorate the plant, but as it grows older more manure is required.

Tea plantations are started from seed sown in circles of 2 feet in diameter, an average of thirty seed being sown in each circle, the center of which should be at least 5 feet from its neighbor. The soil



PLATE 1.—The tea-plant. Large-leaved variety (Mécha). Leaf, flower, and seeds natural size.

should be well drained. The plant will grow well on level land or on the hillsides, the latter being usually selected because cheaper; and

## PREPARATION OF TEA IN JAPAN.

the hillsides are terraced and cut so as to maintain small level patches, prevent too violent rushes of water during heavy rains. When seeds begin to come up and grow they develop into a compact



PLATE 2.—The tea-plant. Small-leaved variety (Ocha). Leaf natural size.

, some of the shoots of which bear leaves of a darker color and  
er texture than others, and often smaller. This is one of the diffi-

culties experienced by the Japanese tea-farmers, but one which it seems should and could be removed by the exercise of proper care.



PLATE 3.—The larva and larve case of the "Mine Mushi" (*Psyche*, sp. 1).

#### PARASITES.

The insects so destructive to the tea-plant in India have not yet made their appearance in Japan, and the Japanese farmer is free from

the spoliations of the red spider, the tea-bug, the green fly, and the orange beetle; the principal enemy he has to contend with is the *mino mushi* (*Psyche*), as per drawing No. 3.

This tea parasite cannot easily avoid detection when on his raids of mischief, though if not arrested in due time often proves quite destructive to the tea-plant.

#### PICKING.

The first picking of tea commences about the 1st of May and lasts twenty or thirty days. The second crop is gathered in June and July, and not unfrequently a third one later on. The picking is performed almost entirely by females, who average from 3 to 4 pounds per day and receive about 15 cents per day. Travelers along the roads leading from the tea districts to the towns and cities, seldom find them during the tea season free from men carrying baskets full of green leaves, to be fired.

Generally the tea is owned by small proprietors, who fire it at home, and then sell the fired leaf to large dealers, who, after purchasing such quantities as desired, send their various purchases to the treaty ports.

#### STEAMING AND FIRING.

When the leaves are picked they are steamed as early as possible, which is done by placing them, in a round wooden tray with a brass wire bottom, over boiling water, the tray filling up the mouth of an iron cauldron set in plaster over a wood fire.

The process of steaming is complete in about half a minute. The moist leaves, with their natural oil, rise to the surface, are then placed upon a wooden table, and within a few minutes are taken into the firing-room.

Firing is considered the principal manipulation. It is conducted in a box-shaped wooden frame about 4 feet long by 2½ feet wide. This box is coated with plaster and forms the oven. Charcoal (well covered with charcoal ash) is alight in the bottom of the oven, and about a foot and a half above the charcoal rests the wooden frame, with tough Japanese paper stretched across it. It is said that one such paper tray will often last for a whole season. About 6½ pounds of green leaves are thrown into one of these paper trays, and a man now proceeds to fire this quantity, which when finished is reduced to 1½ pounds.

#### SORTING.

The tea has now to be sorted, which is done as follows:

The tea is passed from the firing-room to men who sort the leaves by jerking them up and down in hand-trays made of bamboo, thus separating the light from the heavy leaves.

To sift the tea it is passed to a sieve, which generally hangs suspended from the roof and is swung back and forth with a circular motion, whereby the fine and thin leaves are collected in a heap on the floor and the larger and coarser leaves are retained and thrown into a separate box.

In order to complete the country preparation the tea is repicked, which is done as follows:

The tea is placed upon a long, flat table, and the girls who sit around the table sort out the seeds, stalks, and whatever rubbish may be found mixed with the tea. After finishing the picking, the tea is packed into wooden boxes, which are nailed, corded, and marked, and sent to the nearest treaty port for sale.

After the tea has been purchased by foreigners, and before it is ready for export to America or Canada, it has to undergo a further manipulation of either pan-firing or basket-firing.

Pan-firing is done as follows: In a foreign tea-firing godown a number of rows of tea-firing pans are set up in brick and mortar and heated by charcoal. The pans are of iron and 21 inches in diameter and 13 inches deep. The tea which is to be fired, and which, as a general rule, has been bought in small lots and different qualities, is thrown together in large quantities of the same description and carried by women in baskets to the firing godown, and, standing near the pans, they wait until a signal is given by the overseer, when all the baskets are emptied into the pans (about 5 pounds weight into each pan). The fires are well lit and carefully attended to, and the stirring of the leaves continues uninterruptedly until the overseer gives the signal to desist, when the women again take out the tea and remove it to the packing godown or put it through a second process of stirring in cooling-pans.

The pan-firing of one lot of tea lasts on an average from thirty to forty minutes in the hot pans and from ten to twenty minutes in the cooling-pans.

The women who are employed in the tea-firing godown receive from 12 to 14 cents per day, and have to work from 4 a. m. to 6 p. m., in two "gangs," taking turn and turn about.

*Basket-firing.*—A basket made of bamboo, shaped like a dice-box, but open at both ends and connected at the center by a closely-woven tray, is placed over a large iron brazier which contains heated charcoal (well covered with ashes), and the tea is strewed about an inch thick on the tray, occasionally undergoing the stirring process. At intervals the baskets have to be removed from the fire and examined, so that the tray may not be scorched. In about forty or sixty minutes the tea is ready for packing.

#### LABOR.

The foreign tea-firing godowns give employment to thousands of poor Japanese who live in Kobe-Hiogo and its environs, and as these people are not regularly engaged, but are taken on by the day or hour, as occasion may require, it is a case of "first come, first served," and you see and hear the poor women, some young, some old and decrepit, with babes on their backs, flocking into the settlement between the hours of 2 and 4 in the morning, anxiously waiting for a chance to earn their daily bread. The noise these people make before they are engaged in firing tea is something remarkable and must be heard to be appreciated, and any one sleeping in close proximity to a tea-firing godown may as well get up, for there is no rest for the weary while the tea season is in full blast.

#### COLORING OF TEAS.

When teas are to be colored the teas are "pan-fired," and while they are undergoing the stirring process, the overseer, at the proper moment, adds about one teaspoonful of thoroughly pulverized soapstone and five grains or so of powdered Chinese indigo to every pan, which is thoroughly rubbed into the leaf for about twenty minutes, when half a teaspoonful of soapstone and pulverized tamarack bark is added and the stirring and rubbing continued for another twenty minutes. After examination, at a given signal, the tea is then placed into cooling-pans, and simply rubbed against the cold iron surfaces until the required polish has been given to the tea.

The foregoing is the general method of coloring teas. Different manufacturers, however, vary the process now and then to produce a slight change of color.

The leaf is then taken out of the pan and run through three to five different sizes of sieves, till all the dust and loose coloring matter are separated. The shrinkage ranges, according to the quality of tea, from 12 to 15 per cent.

After the tea has gone through the different manipulations in the foreign tea-firing godown, it is sifted, packed, weighed, boxed, rattaned, and marked, and is then ready for shipment.

It may be interesting to know that, besides the carefully cultivated tea plantations in Japan, there are in the southern districts of this island a great number of wild indigenous tea-plants growing in jungle, which, although cut, together with other vegetation, when the land is cleared, grow up again, and are then trained into shape and constitute naturally grown tea-gardens.

#### PORT OF KOBHI-HIAGO.

In conclusion I respectfully submit a few remarks about the port of Kobi-Hiogo, in which this consulate is situated.

Kobi-Hiogo, the third most important port in the East, is situated in latitude  $34^{\circ} 41' 30''$  north, and longitude  $135^{\circ} 11' 10''$  east. It is a bright and pleasant looking city and considered the most prepossessing of the "treaty ports" in Japan. To the westward wooded points and promontories appear to close the channel, and to the eastward is a stretch of land-locked water which leads to the city of Osaka. Immediately behind Kobi there stretches a range of steep, more or less bare, and very picturesquely shaped hills. Kobi, with Hiogo, the old Japanese town, stretches along the shore for a distance of over 3 miles. The climate of Kobi-Hiogo is excellent, and during the summer months many residents of China come to this port for purposes of sanitation.

The foreign concession is regularly and beautifully laid out. It is called a "model settlement," for it is well lighted with gas and supplied with water, kept scrupulously clean, and is efficiently cared for by the municipal authorities. The streets are wide and cross each other at right angles; the sidewalks are well paved with tiles laid edgewise, with curbstones and solidly paved water-ways. The foreign houses are very roomy and solid.

That Kobi-Hiogo will in the future be the most important port in Japan and will approach the New York and New Orleans of the United States will be seen from the fact that at the beginning of this year Kobi had 14,711 houses, with a population of 33,643 persons—namely, males 17,323, and females 16,320. Hiogo had 9,557 houses, and a population of 27,720 persons—viz, 13,661 males and 14,059 females. This shows a total population in Kobi-Hiogo of 61,363 persons, which is an increase over the past two years of 6,942 persons.

With a bay beautiful as that of Naples, almost surrounded by mountains, affording anchorage to the largest ships and protection from the typhoons that so often vex Asian seas, this port is inviting to Western civilization and commerce.

I cheerfully acknowledge my indebtedness to the vice-consul here, Mr. F. J. H. Meustead, for assistance rendered in the preparation of this report.

THOS. R. JERNIGAN,  
Consul.

UNITED STATES CONSULATE,  
*Osaka and Hiogo, Japan, August 28, 1886.*

# AGRICULTURE IN JAMAICA, 1884-'85.

REPORT OF CONSUL BEYLARD.

The island of Jamaica is situated in 17° 43' and 18° 32' north latitude, and 76° 11' and 78° 20' 50" west longitude. Being thus well within the tropics, it is admirably adapted for producing most if not all the fruits and plants of a tropical nature besides many of those peculiar to sub-tropical and temperate climates. The Blue Mountain range, traversing the island from east to west and rising at its highest peak nearly 8,000 feet above the level of the sea, has the effect of producing many of the most delightful varieties of climate, and causes the mean temperature to vary from an average in Kingston of 78° to that of 62° at the government cinchona plantation, 4,850 feet above the sea-level. The country is well, and in most parts abundantly watered by innumerable rivers and streams, having their source in the mountains. The mean rainfall for the year is 67 inches, though in the southern division of the island it only attains 49 inches. Owing to the absence of a topographical survey of the island, a difficulty is sometimes experienced in obtaining accurate returns. All statistics used herein are from government returns of the last two years.

It is estimated that Jamaica contains 2,720,000 acres of land, of which about 559,372 are unfitted for cultivation or use, owing to their inaccessibility, or from their consisting of irreclaimable swamps or rough, rocky land, leaving 2,160,627 acres of useful land.

This portion is divided as follows :

	Acres.
Under cultivation .....	128,001
In guinea grass .....	121,886
In common pasture and pimento .....	331,342
Wood and ruinata .....	1,267,058
Ungranted, in hands of Crown .....	312,340

One peculiarity of Jamaica is the large proportion of peasant proprietors among the agricultural population. Of those having small holdings of 5 acres or less the proportion is 70 per cent. of the whole, and these hold about equal quantities of cultivated and wild land, the respective amounts of each being 41,000 and 43,000 acres. The other 30 per cent. of the landed proprietors hold a proportion of but 1 acre of cultivated land (including that in guinea grass) to 92 acres of land in ruinata and wood. A very large portion of the coffee, pineapples, pimento, and ginger exported, and nearly all the yams and ground provisions grown, are produced by those small settlers, who are the back-bone of the country. The following table will show the number of holdings, with their various sizes and aggregate acreage held in cultivation, guinea grass, and ruinata, respectively :

Classification of holdings.	Number of holdings.	Under cultivation.	Guinea grass.	Common pasture, pimento, and wood.
		Acres.	Acres.	Acres.
Less than 1 acre each .....	10,536	3,917	99	1,901
Between 1 and 5 acres .....	28,802	35,210	1,801	40,810
Between 5 and 10 acres .....	7,236	12,207	1,225	38,913
Between 10 and 200 acres .....	14,934	20,623	14,073	267,710
Between 200 and 1,000 acres .....	928	11,595	26,543	413,966
Between 1,000 and 1,500 acres .....	235	14,166	21,939	246,346
Over 1,500 acres .....	237	24,334	50,621	541,163
Total, 1883 and 1884 .....	55,168	122,054	116,304	1,550,819



## Contents

Upon every acre in cultivation .....	6
In guinea grass .....	3
In common pasture .....	1½
In pimento .....	1½
In ruinate and wood .....	1

Formerly everything was subordinated to the production of sugar and, in a lesser degree, of rum, and they still are the staple productions of the island, though fruit has risen to an important place among the exports. Last year the average under cultivation was divided as follows:

	Acres.
Sugar-cane .....	40,425
Coffee .....	18,856
Ground provisions .....	67,017
Cocoa .....	415
Corn .....	906
Ginger .....	147
Other articles .....	235
<b>Total</b> .....	<b>128,001</b>

[illegible]

SUGAR.

Nearly one-third of the cultivated land is in sugar-canes. Of 40,485 acres devoted to its growth about 3,500 are tilled in small patches or plots by settlers and squatters, while the remainder, or 37,000 acres, is divided among 191 sugar estates, making an average of 194 acres of canes cultivated by each. To carry on this cultivation some years ago coolies were introduced from East India, but after a time their importation was stopped; there are about 11,000 of them on the island. Last year the amount of sugar exported was 499,717 cwt., being 88,806 less than that exported in 1883-'84; 85,513 cwt., of the value of \$255,547.75, were exported to the Dominion of Canada.

RUM.

Of this other product of the cane the output for the year was increased in quantity by 171,571 gallons and \$65,400.89 in value. Notwithstanding the increase in the output of rum the cultivation of canes is not at present remunerative. For this there are alleged to be several reasons in addition to the competition of beet-root sugar; one of these is the expensive and unsatisfactory kind of labor available in Jamaica. In Jamaica, sugar produced by slave labor was profitable; by free labor under the present conditions it is quite the reverse, although the average wages of the laborer on the plantations is less than thirty-six cents a day; the hours are only from 7 o'clock a. m. to 4 o'clock p. m., with an hour deducted for breakfast and a whole holiday on Saturday, thus reducing the working hours per week nominally to forty, but owing to the negro's almost infinite capacity for sleep and idling, practically they perform but little more than thirty hours all told. They are bitterly opposed to all kinds of labor-saving machines, and this feeling coupled with their mechanical inaptness is the cause of many wasteful processes in agriculture being employed. Another important reason for the failure to raise canes at a profit at present is the fact that on many of the estates machinery of the most antiquated type is used, thus rendering the process of reducing the cane wasteful and insufficient, and so deducting largely from its manufactured products. A great outcry has been raised against the unfair competition of beet-root sugar with cane, but unless the processes employed in extracting the juice and sugar are elsewhere very much improved upon those in use in Jamaica, cane sugar must cost too much to make ever to oust the beet-root article. When the same skill, energy, and knowledge are brought to bear upon the growth and manufacture of sugar-cane that are employed in the growth of beets and the extraction of sugar therefrom, then, probably, cane cultivation will once more be remunerative and the sugar-cane be able to hold its own against the beet.

COFFEE.

This item of island produce is third in importance of the exports. The amount exported in 1884-'85 was 32,300 cwt., and \$283,390.06 in value in excess of the export of the previous year. Owing to the low prices, which for several years have ruled, settlers are gradually relinquishing the cultivation of coffee, and in some districts owing to the fields being partly exhausted it is being entirely abandoned. Some of the finest coffee in the world is produced in Jamaica, the "Up Mountain" coffee bringing as high as from \$30 to \$40 per cwt., and if greater care and attention were bestowed upon the production of the common

grades it would still be remunerative. There is an abundance of virgin soil in the island well suited to the growth of this staple, which can be bought at reasonable prices, and it is an industry that would give a fair return for capital invested in it by active, enterprising men.

#### ORANGES.

The Jamaica orange is excellent and a great favorite with consumers. In the island it is allowed to grow wild, with the inevitable result of the fruit being much inferior to that which would be produced by proper cultivation and attention. Its growth here would probably repay investors better than its cultivation in Florida, and if American orange-growers were to establish groves here and bestow upon them the same skill and care as that which characterizes them there and in Southern California they would realize large profits. At present the best fruit produced here is in the parish of Manchester.

#### BANANAS.

The trade in this fruit has increased enormously within the last few years, and while the older industries of the colony are threatened with a decrease in cultivation, this one has not only maintained its ground, but, year by year, has advanced, not by strides only, but by leaps and bounds. It is questionable, however, if it has not nearly reached its limit, as Cuba, Mexico, and the coast along the Spanish Main are now going into its cultivation to a very large extent, and unless an opening be found in Europe, the market, which at present is almost exclusively in the United States, will be insufficient to consume all the fruit likely to be produced in the near future. To do this some such plan as conveying the fruit in cold chambers, similar to that used in bringing meat from Australia to England, must be adopted. If this means of transport were introduced an exceedingly large trade could be done not only in bananas but in pineapples, mangoes, and other tropical fruits, which would be highly remunerative to the planter, ship-owner, and dealer.

#### COCOANUTS.

In this article also a large and increasing business is being done. The cocoanut palm requires, after the first year or two, little or no attention, and yields abundantly for a great length of time, and can be grown on land otherwise useless.

#### YAMS.

A new feature in exports from this island has been the shipment of yams and other ground provisions to the Isthmus of Panama. The exports in the last three years of these articles show the following increase in value:

1882-'83.....	\$13,037 35
1883-'84.....	48,265 94
1884-'85.....	52,490 33

There is also a very large home trade, and the average price received last year was about \$2.19 per hundred-weight. They are easily grown and return largely, the chief difficulties experienced being drought and pilfering by the predial classes, "Quasshie" considering he has a heaven-born right to all articles of food that grow. The yam is far superior to the sweet potato, and would prove an agreeable change in America to the ordinary white.

## CATTLE, HORSE-KIND, ETC.

The following schedule will show the number of horse-kind (including mules), asses, and horned stock on the island in 1883-'84:

Number of horse-kind used on roads.....	29,907
Number of horse-kind not used on roads .....	16,169
Total .....	46,076
Number of asses used on roads .....	11,547
Number of asses not used on roads .....	1,853
Total .....	13,400
Number of horned stock.....	80,430

In some parts of the island horse-breeding and cattle-raising are carried on quite extensively and with considerable success. The number of cattle slaughtered in 1884 was 15,464.

## SHEEP.

Sheep are raised to some extent, and are of fair quality, but there are no statistics to show the number. Owing to the climate the wool is inferior to that grown in the temperate zone.

The following are the average prices of some of the agricultural products:

Cattle.....	per head..	\$50 00 to \$100 00
Horses.....	do....	50 00 to 150 00
Sheep.....	do....	7 00
Goats.....	do....	3 00
Swine.....	do....	7 00
Milk retails at.....	per quart..	12
Fresh butter.....	per pound..	62
Fresh beef.....	do....	12
Fresh mutton.....	do....	18
Fresh pork.....	do....	18
Coffee.....	do....	12
Refined sugar.....	do....	6

LOUIS D. BEYLARD,  
*Consul.*

UNITED STATES CONSULATE,  
*Kingston, Ja., October, 1886.*

## SUGAR IN SALVADOR.

## REPORT OF CONSUL DUKE

Among the chief objects of culture in the Republic of Salvador is the sugar-cane; the export of raw sugars is a source of considerable wealth to the country, ranking third among the articles of commercial importance.

The sugar cane grows best on wide, open, unbroken plains that offer no impediments to an efficient use of the American plow. The soil most favorable to its production is a rich heavy black loam; light soils containing sand or gravel are avoided, as their inability to retain much moisture causes the cane to wither during the dry season. Good land

answering to all the required conditions for cultivation, with suitable sites for the erection of machinery, may be found in all parts of the Republic.

The use of natural or artificial fertilizers is almost totally unknown amongst agriculturists of this country; the only artificial means used to recuperate the soil are to burn all the weeds and refuse on the fields and to spread the wood ashes from the furnaces, the refuse from the filter presses, and the skimmings and settlings from the juice treated with lime. These are, of course, insufficient in quantity, but always prove very effectual.

Land can be purchased at such nominal prices that renting is very unusual in this country, except among laborers who take small lots; the price differs according to the population of the district; \$3 per manzana (100 square yards), or the equivalent in produce, is the average. Sometimes land rent is paid in labor.

Labor is somewhat plentiful, although when the maize is planted in May and November a scarcity is felt.

The "mozos" work by the piece, their tasks being measured out to them; reapers are expected to cut three cart-loads of cane of a given weight per day, and the cartman to deliver four cart loads at the mill daily. Europeans, accustomed to the climate, could easily do twice as much as a native.

The tools used are of the simplest and most primitive description. The machete is the invariable tool as well as weapon of every laborer; it is used to cut down the cane and to clear the ground from brushwood and weeds. Besides this the hoe and native wooden plow are used.

On the larger plantations American plows are to be found.

The machinery erected in the large sugar manufactories in the country is of the finest English or German make with all the latest improvements, as used in the English colonies; worked by steam with triple effect; vacuums and centrifugals able to produce from 1,000 to 1,500 tons during the crop.

The native mills are of wood, worked by oxen. The juice extracted is boiled over open fires till it granulates.

There are no fixed hours for work in this country. As the laborer is paid by the piece or task, he begins early or later as he chooses, provided his task be efficiently carried out. He then receives 2 reals (in small remote estates  $1\frac{1}{2}$  reals), and his food twice a day. Mill hands work by the day of twelve to fourteen hours, and are paid from 2 reals, according to their skill. If they are required for night work they generally get double pay and an extra meal. Like the field hands, they receive their food, which costs the planter about one-half real each man.

Directly the rainy season is over, in November and December, the cane-planting begins. A man is paid \$20 for clearing and planting a manzana. The seed is provided. After plowing the land two or three times, furrows are made about 15 or 18 inches deep, 2 yards apart, into which cuttings of cane are laid lengthwise and then covered over with soil.

The cane sprouts very quickly, and about March the field is cleaned and weeded, all of which is included in the contract. In May the plow is used between the furrows, and the final cleaning and weeding take place in July, after which it is not touched till the following January, when the cane is quite ripe.

The plowing of a manzana in May costs \$1.50, and the final cleaning in July from \$2 to \$4.

Once planted cane yields from five to eight crops before it is exhausted, but where the soil is very rich it has been known to yield from eighteen to twenty crops.

A manzana produces from 1,500 quintals of cane, which produce from 9 to 10 per cent. of sugar.

J. MAURICE DUKE,  
*Consul.*

UNITED STATES CONSULATE,  
*San Salvador, June 10, 1886.*

### COFFEE CULTURE IN MEXICO.\*

TRANSMITTED BY CONSUL-GENERAL JAMES W. PORCH.

#### PREVALENT ERRORS.

I do not propose to state in this treatise how the coffee tree is cultivated in Mexico because this would serve only to perpetuate among growers grave errors that exist and pass unnoticed, although causing serious injury to our cultivators and detriment to the productive forces devoted to the development of the industry. My object is higher, for instead of saying how the coffee-tree is cultivated, I desire to show how it ought to be cultivated, in order that a plantation may be economical in its installation, execution, and cultivation, abundant in fruit and fine in quality, rich in caffeine; also, that the plantation may be of the greatest duration possible.

As grievous errors have been made in choosing land and clearing same, sowing seed-plots, transplanting and nurture of seed-plants, and establishing and culture of coffee plantations, I will mention those which, being the gravest, it is necessary to set right, that the pernicious effects resulting therefrom may be corrected. These errors are as follows:

Heretofore a piece of land has been chosen without submitting the soil to a scientific analysis to test its quality, formation, and composition, the only means of ascertaining whether the soil contains the elements that the coffee tree requires for its perfect development and abundant yield. In general the selection is left to chance.

It has been thought that to establish a coffee plantation it is indispensable to destroy all vegetable refuse by fire, an error whose fatal consequences growers that have followed this system cannot too deeply deplore.

It has been thought that with badly planted and ill-trained seedlings it is possible to start a coffee plantation under the best conditions possible, an error which results in the loss of a year's time, expenses, and labor.

It has been thought that shade is indispensable in the cultivation of the coffee tree, an error for which there is not the slightest foundation.

It has been thought that coffee plantations may be established advantageously without the means of irrigation, an error which all must deplore who own plantations that are wanting in this respect.

It has been thought that as the coffee tree does not need irrigation to produce good crops, neither are drains necessary to carry off the currents of rain-water from the surface of the earth, which, as is true, fertilize the earth where properly directed, but contribute greatly to render it barren when allowed to flow at will.

It has been thought that in order to clear the plantations from weeds, which are so hurtful to its development and fructification, it is necessary to make use of the machete (a large knife), an error fraught with most pernicious results.

It has been thought that the coffee tree does not begin to bear until four or five years after transplantation, an error which arises from want of knowledge as to cultivating the nurseries and establishing the plantations.

It has been generally supposed that the coffee tree is a plant only adapted to a hot country, an error which proves a stumbling-block to many agriculturists, is an obstacle to the development of coffee-growing, and an impediment to the public wealth of the nation.

The principal errors made in cultivating coffee have now been cited. I pass on to show what every grower should do, in my humble opinion, who is desirous of making his plantation more productive and thus increase his capital.

\* From an article on the cultivation of coffee in Mexico, written by an extensive grower, of large experience.—J. W. P.

## LAND SELECTION.

In selecting land it is necessary to submit the soil to a scientific analysis, in order to ascertain if it contains the elements requisite for the nutrition, development, and fructification of the coffee tree.

The spot chosen must afford the means necessary to establishing a system of irrigation, even though this be at great expense, for a properly irrigated coffee plantation will yield four crops annually, which without irrigation would give but one crop each of the first years, and in the following the plants would run to stalks, lose their leaves, and turn yellow, while the crops would not pay for the cost of cultivation, and it would be evidently preferable to start a new plantation rather than continue to waste money in feeding hopes not to be realized.

In selecting land it must be ascertained that the following conditions exist: That the soil does not contain sand or gravel to the depth of three varas (a vara = 0.9139 yard); that the subsoil be of permeable, argillious earth; that the layer of black vegetable earth be at least half a vara in depth; that the land may not slope too much, in order to avoid washouts, also, that the harvesting of the crop may be economical; that the soil be virgin mountain; that the plantations be situated in a locality where laborers may be kept, also provisions for consumption, and near a public highway, in order to facilitate the transportation of the crops.

## PREPARING LANDS.

When a piece of land has been found uniting all the above conditions, it must be cleared by cutting down all the underbrush, bushes, and small trees over the whole extent that it is intended to cultivate.

This operation terminated, ditches must be opened alternately in opposite directions and 10 to 15 varas apart. The one serve for irrigation, and start from the gullies to the furrows; the others serve for drains, and start from the furrows to the bottom of the gutters.

When such ditches have been opened throughout the whole extent of the piece of land, then the ditch or ditches must be opened which are to form the canal of alimentation for all the gutters from whence the water for irrigation is to be taken.

Next the land must be cleared, beginning with the smallest trees, taking care to chop them close to the ground, as also all shoots. The trunks must be cut into pieces a vara and a half in length, to be used the second year as a support to the cajete of each coffee tree.

The large trees must be cut so that they fall crosswise. All the branches must be divided into short pieces. Care must be taken to clear the ditches of all the fragments that cover them.

The land must all be cleared by the end of January. The cajetes must be farmed in the month of February, beginning at the lowest part of the land, where the water is most abundant. When the cajetes have received the action of the sun's rays and other atmospheric influences for a month, the coffee tree must be transplanted at the latest in the month of March. The coffee tree must be transplanted with the earth about its roots, placing two trees in each cajete, 10 to 12 inches apart. The irrigating ditches should extend across the plantation, which should be irrigated frequently during the first fifteen or twenty days.

The plantation should be weeded before the weeds have become an inch high. In this way the weeds are destroyed economically, whereas were they allowed to grow it would cost much money and labor to destroy them. Thus the surface of the soil is preserved compact, which after the first rains is covered with a species of moss, which serves as a preservation against washouts. It is easy to understand how necessary it is to establish drains to carry off the currents of rain-water, as this system serves to preserve for many years the rich soil of the surface, causing the coffee tree to obtain its greatest development; thus its fructification becomes more abundant, the fruit better nourished, larger in size, richer in color, containing a greater quantity of caffeine, and consequently finer in quality.

The advantages obtained from establishing a system of irrigation upon a coffee plantation are indisputable.

## IRRIGATION.

There are growers who maintain that the coffee tree does not require irrigation. It is not sufficient that a coffee plantation be moist from the nature of its soil and the atmosphere surrounding it; it must be, nevertheless, irrigated twice a month during the dry season. Cultivated in this manner, it will flower in March, May and June, August and November. Although they may be scanty, still the four flowering seasons, taken together, will produce a larger yield than the best yield of a non-irrigated plantation. Besides, economy is gained, for without increasing the ordinary number of laborers the crop

can be harvested. Another advantage obtained is that the coffee tree, not being obliged to nourish all its blossoms at the same time, does not exhaust its gestatory powers, as happens in the case of those that have not been subjected to irrigation.

These latter, after giving a good crop the first year, the following produce one of small consequence, on account of the exhaustion of the tree, which most always turns yellow, loses its leaves, and runs to stalk. If to the foregoing considerations we add this one, that the coffee tree cultivated with irrigation in producing its fruits by successive flowering seasons this same fruit is better nourished and larger in size, it is logical to conclude that the coffee is richer in aromatic qualities, and this being the case, should sell to a greater advantage.

As it is pretty generally the belief that the coffee tree commences to bear in its fourth or fifth year, it is necessary to correct this error, which has been an obstacle to the development of this industry, and which has prevented it from receiving the just protection that it merits. A coffee plantation established in the kind of soil indicated and in the manner that will be explained hereafter will yield at the end of two years a pound of coffee per tree. If so fine a crop be obtained at the expiration of two years, how large may not the future ones be when it is considered that the coffee tree reaches its greatest development at the end of eight years?

#### THE LIMIT OF CULTIVATION.

Many think that the coffee tree must be cultivated in lands that are less than temperate and at an altitude lower than 5,000 feet above sea level.

Before I started the plantations I now possess I myself participated in this belief, but actual experience has shown me how false the idea is, for my plantations lie at an altitude of 1,800 meters. Moreover, I am of the opinion that coffee plantations may be established at an altitude of 2,500 meters in the cordilleras of either coast, and if protected from the wind and properly irrigated the coffee tree will develop perfectly well, and even if it should suffer somewhat from the frost all the damage that this would occasion would be to retard its development about three months, and this would be compensated for by a greater yield the following spring.

Plantations in lands more or less hot that are not properly irrigated suffer more from drought than they possibly could from frost.

#### PLANTING.

It is customary among growers in many localities when starting a plantation to plant but one plant in each cajete. I was guilty of this error until experience taught me otherwise. When starting my last plantation I adopted the system of placing two coffee trees in one cajete.

The advantages derived from such a system cannot be denied. The cost of cultivating two coffee trees is thus the same as for one; the two yield more than one; when any trees die, which is of frequent occurrence, it is seldom that both trees in the same cajete die. Thus the soil is not cultivated without profit, for while one tree dies the other remains bearing fruit all the time that the one that has replaced the dead one is coming to maturity.

It will be objected that this system tends to exhaust the soil. This would undoubtedly be the case if the surface has been removed by the trowel, thus permitting the rain-water descending the inclined plane of the land in rapid current to rob the earth of the top soil, even forming fissures and tearing up the coffee trees where the ground is porous and not very compact. If, however, one reflects that I advocate the establishment of drains as indispensable, also that weeds and undergrowth be destroyed in their germ, with this system the layer of black vegetable earth that covers the ground far from becoming loosened and being carried away by the rains becomes solid and compact. But even if this system of double cultivation should exhaust the soil I doubt that a single grower can be found who being able to harvest ten thousand quintals of coffee in ten years at an expense of \$15,000 would prefer to wait twenty years to harvest the same number of quintals at a cost of \$30,000.

#### SHADE AND DRAINAGE.

It is likewise the belief that shade is necessary to the perfect development of the coffee tree, especially in hot countries. I do not share this opinion, but on the contrary am convinced that shade is prejudicial. At an altitude of 6,000 feet the coffee tree cultivated with shade turns yellow and is of imperfect development. At an altitude of from 1,000 to 3,000 feet it presents a very luxuriant appearance; grows very tall; its leaves are very large; its trunk very slender, indicating that it has few roots; the distance from branch to branch very great, as likewise from leaf to leaf where the fruit grows, and this so scarce and of such a disagreeable flavor that a fair price cannot be obtained for it on the market.



I am therefore of the opinion that a coffee tree properly cultivated and irrigated does not require shade. In case there is no water for irrigation then shade must be used, not because the coffee tree needs it, it is the earth that requires the shade in order that it may preserve the necessary moisture and maintain itself in a condition to give to the roots of the coffee tree the moisture that the tree requires for its nutrition, development, and fructification.

A coffee plantation that is not irrigated nor shaded, receiving the action of the solar rays from the end of the rainy season to the beginning of that of the following year, passes six months of most oppressive drought under these conditions; the earth dries up with so much the more rapidity as is greater the evaporation caused by the action of the sun's rays.

The earth then contracts and in contracting cracks open, and these cracks, although invisible to the naked eye, prove their existence by the fact that in forming they break the tender roots of the coffee tree; besides, the earth, lacking moisture, is not in a condition to afford the coffee tree the elements requisite to its life and development. Consequently, the coffee tree becomes diseased, which is shown by its turning yellow, its leaves falling off; and, deprived of these, it is unable to nourish itself by the absorption of the atmospheric elements when the earth is unable to afford any. Under such conditions the coffee tree does not recuperate its lost luxuriance until after a year of steady cultivation, and it is not until the following year that some of its branches are restored—its leaves, never. Then, recovered somewhat from the injuries that the drought occasioned, it puts forth a scanty number of blossoms.

I do not know of any coffee-growers who have established on their plantations the drains necessary to carry off the currents of rain-water which, if not properly controlled, wash away the covering of black vegetable earth, which, on account of its richness in fertilizing properties, assures the success of a coffee plantation. Even if irrigation and drains cannot be established upon a plantation except at great cost, no effort nor sacrifice should be omitted, for if the first guarantees to the owner four crops a year, the second assures him that said crops will be more abundant and the grain fuller, heavier, richer in aroma, and obtaining for him, lastly, the great advantage that the plantation lasts at least twice as many years, producing abundant crops of excellent quality. To go on cultivating coffee in the old way is like trying to work a marble quarry with bars of lead.

The deceptions that have been met with from errors that have been made in starting and cultivating coffee plantations, not only have resulted in loss of time, money, and labor, but have also been the cause that many persons have abandoned the enterprise.

As the causes that have determined the decline in the development of the coffee industry have been shown, men of good sense must introduce into the cultivation of their plantations the changes, reforms, and modifications that their judgment may dictate to them, in view of the principles laid down in the present treatise.

#### CONDITIONS OF SUCCESS.

As the causes that determine the success of a coffee plantation are manifold, I will mention the principal circumstances which must contribute to make its establishment, cultivation, and working correspond to the desires and hopes of its proprietor, viz:

That the seed sown to produce the seedlings be of the finest quality known.

That the fullest developed grain be used.

That the seedlings be well trained, giving them sufficient sun and irrigation that their development may be slow, the leaves small, and the stalk thick.

That the choice of the ground be not left to chance, but made after a scientific analysis of the soil to determine if in its chemical formation there exist the properties necessary to the nutrition and development of the coffee tree.

That the soil be moist and permeable, and that the covering of black vegetable earth be at least half a vara in depth.

That the ground may not slope to such a degree that washouts from the currents of rain may be apprehended. That the depth of the vegetable earth be at least 3 varas before reaching the sand or gravel. That there be water for irrigation.

That there be drains to carry off the rain-water; that the land be virgin mountains; that in planting, the dead trees and stumps left after clearing the land be not destroyed by fire, as they serve to fertilize the earth, to preserve its moisture, to prevent the growth of underbrush, and to prevent washouts.

That the cajetes for the transplanting of the coffee trees be made in the month of February.

That the cajetes be three-fourths of a vara long, 3 varas deep, and one-half a vara wide; that they should remain open and receive the action of the sun's rays during a month.

That in transplanting, the earth in which it has grown remain around the roots of each coffee tree, which earth must be cut in squares of 12 to 15 inches, with the tree in the middle.

That in placing the coffee tree in the cajete the roots must not be doubled up; that in planting, two coffee trees be placed in each pit and that the gaps be filled up with fertilized earth, and this earth be slightly pressed down, without touching the roots of the coffee tree, because this would cause some of the roots to break and the consequent damage would result in a tardy development.

That the planting be done in the months of March, April, and May, and that the means for irrigation be established so that as fast as the trees are planted they may be abundantly irrigated, and afterwards frequently during fifteen or twenty days.

That after having placed a pair of coffee trees in each cajete, a ditch be dug about them 2 feet wide, removing the earth from the upper side towards the lower, digging it so that it can retain the irrigation water; that the space above the furrow from ditch to ditch be not less than  $2\frac{1}{2}$  varas, and the width from furrow to furrow at least  $3\frac{1}{2}$  varas.

Before pulling out the coffee trees from the seed-plots it is necessary to sprinkle them abundantly in order that at the moment of loosening them from the soil the earth may adhere to the roots, and that they may be transported in this manner to the place of transplantation.

If when this is done it should rain abundantly and the pits should fill with water, this must be removed before placing the trees in the pits, otherwise the roots will decay and the trees die.

The coffee trees should be carried from the seed-plots to the place of transplantation in an oblong-shaped box upon the shoulders of the workmen.

As I consider of the greatest importance for the success of a coffee plantation that the seedlings which form it be well trained and leave nothing to desire as to cultivation and development, I will explain the manner of training them.

#### SOWING SEED PLANTS.

Having selected a spot for establishing a coffee plantation one should proceed to the sowing of the seedlings, for which different sites of level ground must be sought within the space the coffee plantation is to occupy; there must be water close at hand for the purposes of irrigation. The reason for establishing the seed-plots within the above area will be readily understood.

Considering only that the nearer they are to the spot where they are to be planted, the more economical will be the cost of installation, for it being necessary to carry the plants with the earth about the roots on the shoulders to the place where they are to be planted, this operation is so much the more expensive and at the same time lengthy the greater the distance.

The grain for the seed-plots must be sown in moist soil, but sufficiently well fertilized, for any other quality of earth is likely to fall off when the seedlings are rooted up for transplanting, and as these must be transplanted in the dry season, if they are transplanted without the soil they have grown in they die, and should they be transplanted in the rainy season the result is loss of a year in time, expenses, and labor. Having chosen the sites for the seed-plots, the earth must be removed to the depth of a foot, forming beds a meter in width and as long as one wishes. The earth removed, all roots, stones, and rubbish must be raked away, after which the ground must be leveled so that rain-water may not collect there. Then the coffee grains are laid in rows, each grain 2 inches distant from the other; this done each grain is pressed lightly with the finger so that it enter a quarter or at most half an inch in the earth. The grains are then covered with loose earth so that they are all covered.

All the beds are then covered with branches of trees that do not lose their leaves. The whole must then be sprinkled, and the sowing is done. The water should run between the seed-plots by means of ditches, for in this way one man suffices for watering all the seed-plots where it would otherwise require six, and when it is considered that the training of the seed-plots lasts a year and a half it can readily be seen what can be economized.

The seed-plots must be situated in an open field, and never in the shade, for if placed in the shade their growth is slow and tardy, the trunk slender, and the roots few.

When the seed has been sown it must be watered slightly every morning with the watering-pot, in order that the ground may remain moist, never wet, because in the latter case either the seed rots and does not germinate, or the earth becomes compressed, and in this case the seed does not germinate.

About forty days after the seed has been sown the coffee tree begins to show itself; then the covering of branches should be removed, and instead another covering of

branches, somewhat raised up, be placed so as not to interfere with the development of the plant.

When all the coffee plants have become visible, bearing on their tops the grain of coffee, which is the germ of their first leaves, and before these open, the transplantation must take place.

#### FORMING THE NURSERIES.

For this operation a sufficient number of beds must be prepared beforehand in the same manner as the first. This should be done on cloudy days, or in the evening when the solar rays have diminished their intensity, and the beds must be abundantly sprinkled beforehand, so that the earth remains moist, but not wet. Then with a stake of hard wood,  $1\frac{1}{2}$  varas in length and 8 or 10 inches thick, pointed at one end, holes must be made at least 8 inches in circumference and 3 in diameter at the top. These holes are placed in a row forming furrows at a distance of 9 to 10 inches from one to the other over the furrow, and the same distance from furrow to furrow, forming a square.

To pull up the little plants without breaking their tender roots, it is necessary to make use of a thin stick shaped like a wedge. Introducing this rustic instrument about 6 inches and using it as a lever the little plant can be taken out with the earth about it, and its roots intact, and in this state the plants can be carried to the spot where the nursery is to be formed. As soon as a bed has been planted it must be shaded with a covering of branches, but this must not be too compact, in order that the rays of the sun may penetrate. As this should be done in December it is necessary to water the plants constantly during the whole of the dry season; all the shoots that appear must be destroyed immediately.

At the beginning of the rainy season, and after two or three falls of rain, it is best to remove the shade and stop irrigating, there remaining nothing else to be done but to keep the plantation free from weeds, &c. At the beginning of the rainy season and before it ends, the earth should be turned up to the depth of 4 or 5 inches.

After the rainy season is over irrigation must be again resorted to. The leaves of the plants must be sprinkled gently, never with force.

If shortly after the rainy season the plants stop growing, and their leaves begin to change from a dark green to a yellowish hue, they must be shaded immediately.

Coffee plants treated in the foregoing manner will be at least 2 feet high, with a pretty thick stalk, and sufficiently large roots in the month of March, at which time they must be transplanted to the spot where they are to remain definitely, which circumstances should be taken into consideration by all who intend to devote themselves to coffee growing, for without good seedlings it is impossible to establish a good coffee plantation. Without good seedlings the costs of cultivation for the first year are lost entirely; the first crop, which ought to be harvested a year before, will not be harvested until a year afterwards, nor will it be as abundant as it ought to be, for a sickly seedling can never make a vigorous plant any more than a sickly child can become an athlete. When a state of anæmia exists it makes itself manifest in all organic creatures, and philosophy clearly teaches us that that which possesses nothing can give nothing. Taking this principle for a basis, and the consequences that may be deduced from its application, it will be readily seen that no expense should be spared to establish a coffee plantation, if not conformably to the principles of science, as this has not yet uttered its last word, at least conformably to the rules of art, which is nothing else but the expression of experience acquired by study and observation.

When a coffee plantation is established and cultivated in the manner recommended in the present treatise it will yield its first crop at the end of two years and a half, a pound to a coffee tree; and, however low the market price may be, the proprietor may rest assured that this first crop will pay all the costs of establishment, cultivation, &c., and leave the plantation cleared of all expense. The second crop will produce a pound and a half to the tree, and the third crop 2 pounds, increasing thus continually as the tree attains greater development, working out the fortune of a family and satisfying and enriching the owner.

The road leading to this goal lies open to all. Let those of good will start out upon the journey.

## TARIFF OF MEXICO.\*

Circular No. 5, April 20, 1885, prescribes the values at which foreign moneys of account shall be received by Mexican consular officers, as provided by article 66 of the tariff, as follows:

Countries.	Coins.	Metals.	Value in Mexican dollars.
Argentine Republic.....	Peso.....	Gold and silver.....	\$1 00
Austria.....	Florin.....	Silver.....	40
Belgium.....	Franc.....	Gold and silver.....	20
Bolivia.....	Boliviano.....	Silver.....	30
Brazil.....	Milreis.....	Gold.....	55
British America.....	Dollar.....	do.....	1 00
Central America.....	Peso.....	Silver.....	90
Chili.....	do.....	Gold and silver.....	95
China.....	Tael.....	Silver.....	1 25
Colombia.....	Peso.....	do.....	90
Cuba.....	do.....	Gold and silver.....	1 00
Denmark.....	Crown.....	Gold.....	27
Ecuador.....	Peso.....	Silver.....	90
Egypt.....	Piaster.....	Gold.....	5
France.....	Franc.....	Gold and silver.....	20
Germany.....	Mark.....	Gold.....	25
Great Britain.....	Pound sterling.....	do.....	5 00
Greece.....	Drachma.....	Gold and silver.....	20
Haiti.....	Gourde.....	do.....	1 00
India.....	Rupee.....	Silver.....	40
Italy.....	Lira.....	Gold and silver.....	20
Japan.....	Yen.....	Silver.....	1 00
Netherlands.....	Florin.....	Gold and silver.....	40
Norway.....	Crown.....	Gold.....	27
Paraguay.....	Peso.....	do.....	1 00
Peru.....	Sol.....	Silver.....	90
Porto Rico.....	Peso.....	Gold.....	1 00
Portugal.....	Milreis.....	do.....	1 08
Russia.....	Ruble.....	Silver.....	70
St. Thomas.....	Dollar.....	Gold and silver.....	1 00
Sandwich Islands.....	do.....	Gold.....	1 00
Spain.....	Peseta.....	Gold and silver.....	20
Do.....	Peso.....	do.....	1 00
Sweden.....	Crown.....	Gold.....	27
Switzerland.....	Franc.....	Gold and silver.....	20
Turkey.....	Piaster.....	Gold.....	5
United States.....	Dollar.....	Gold and silver.....	1 00
Uruguay.....	Patacon.....	Gold.....	1 00
Venezuela.....	Bolivar.....	Gold and silver.....	20

By the circular No. 8, of May 9, 1885; decree of June 22, 1885; circular No. 10, July 1, 1885; circular No. 13, July 22, 1885; decree of August 1, 1885; decrees of September 3 and October 1, 1885; circular No. 21, of December 12, 1885; decree of December 23, 1885; decree of March 1, 1886, and circular No. 2, of April 30, 1886, the following corrections and additions to the vocabulary and tariff list have been made:

Numbers.	Articles.
	<i>Circular No. 8, May 9, 1885.</i>
	Aconite and its salts instead of being classified with camphor, 521 (517), is changed to alkaloïds and their salts, 509 (518).
	Thread, white and yellow, of cotton, given as 48 (27), should be given as 49 (28).
	<i>Decree June 22, 1885.</i>
664 (674)	Oils, purified mineral, not specified.
665 (675)	Oils, mineral, in crude state, not specified.
503 (507)	Acetates of alumina, or of iron.
	Accordeons. ( <i>See Musical instruments.</i> )

\* This includes all the decrees and circulars published by the Mexican treasury department up to September 30, 1886, which modify the general tariff laws translated by me and published as No. 634 of Consular Reports for June, 1885.

The marginal figures refer to the numbers in that translation, those in parentheses being those of the Spanish official edition published by Mariano Lara, Mexico, 1885.—WARNER P. SUTTON, *Consul-General, Matamoros, October 12, 1886.*

Numbers.	Articles.
<i>Decree June 22, 1885—Continued.</i>	
535 (553)	Albayaide, white lead, ceruse.
540 (559)	Alkalies.
535 (553)	<i>Almagre</i> , red lead, red ochre.
588 (595)	Alum.
540 (559)	Ammoniac, liquid.
554 (572)	Ammoniac, gum.
476 (472)	Printed announcements.
477 (480)	Announcements, with pictures, lithographed or engraved on paper or pasteboard, without frames.
	Announcements of all kinds, without frame, painted on metal, according to the kind of metal.
453 (456)	Announcements of all classes, with frames.
585 (553)	Arsenic, red and yellow.
580 (605)	Arsenic, white.
520 (536)	Bicarbonate of soda.
414 (411)	Hand grenades in bottles.
298 (293)	Safes (boxes) of iron, for money, with ornaments of other metal not gold or silver.
42 (8)	Socks of cotton, with small ornaments of silk.
301 (320)	Belts, electric.
8 (15)	Corsets of cotton, linen, or wool, with small ornaments of silk.
588 (595)	Cream of tartar.
682 (640)	Paraffine refuse.
259 (261)	Refuse of flint-stone.
437 (441)	Exploders, caps for giant powder.
322 (336)	Tin in bars or in leaves.
323 (337)	Tin in sheets, leaves, and other manufactures not specified.
390 (371)	Stamps of all classes, with or without frames.
583 (591)	Graphite.
414 (411)	Grenades of glass filled with a liquid for extinguishing fires.
683 (676)	Grease, animal, not specified.
48 (27)	Thread or yarn of cotton, in colors.
581 (592)	Lycopodium.
42 (8)	Stockings of cotton, with small ornaments of silk.
588 (591)	Black antimony.
588 (595)	Oxalate of zinc.
487 (474)	Paper, brown, blotting, and wrapping paper.
682 (640)	Paraffine in crude cakes.
588 (591)	Plombazine.
297 (340)	Lead, granulated for assaying.
	Crests of coats of arms of metal, according to class.
683 (676)	Grease for machines or carriages.
<i>Circular No. 10, July 1, 1885.</i>	
Wool cashmeres, with mixture ( <i>lussia</i> ) of any other material whatever, shall pay the importation duty according to the weight of the square meter, as provided by numbers 134 (185) to 141 (142) of the tariff.	
<i>Circular No. 12, July 22, 1885.</i>	
Telephone wire, like telegraph wire, under f. o. d.	
<i>Decree of August 1, 1885.</i>	
251 (256)	Adobes of crude earth.
585 (530)	Sugar, in powder prepared with lemon.
684 (693)	Canvas, cotton, for covering wagons and carts.
281 (325)	Copper, granulated.
262 (252)	Composition of siliceous sand and viscous and impure substances, for clearing boilers.
206 (222)	Oatmeal.
	Eggs, fresh, hens', free.—(Paragraph second, Fraction I, Section I, of the Disposition for the Tariff.)
363 (367)	Marble, powdered.
210 (235)	Fish, fresh, on ice.
599 (523)	Resin.
363 (367)	Pumice-stone, powdered.
<i>Decree of September 3, 1885, to take effect October 1, 1885.</i>	
ARTICLE 1. The duties given in fractions numbers 190 (207) and 191 (208) of the tariff are modified as follows:	
190 (207)	Beer and cider in bottles, without allowance for leakage or breakage, net weight kilogram, 20 cents.
191 (208)	Beer and cider in barrels, without allowance for leakage or breakage, net weight kilogram, 10 cents.
<i>Decree of October 1, 1885.</i>	
400 (334)	Alpargatas (a sort of hempen shoe or sandal).
	Clay, sand, and <i>arenilla</i> classed with f. o. d.—(Paragraph 21, Fraction I, Section I, of Tariff Laws.)
296 (298)	Manufactures of iron or steel, which are wholly or in part covered with mineral pitch.

Numbers.	Articles.
<i>Decree of October 1, 1885—Continued.</i>	
6 (48)	Articles, not stated, of cotton material, with or without ornaments of another material, and even when they contain in small quantity metal, not gold or silver.
56 (81)	Articles, not stated, of linen, with or without ornaments of another material, and even when they contain in small quantity metal, not gold or silver.
668 (652)	Asbestos in powder f. o. d.—(Paragraph 21, Fraction I, Section I, of Tariff Laws.)
206 (222)	Asbestos, in sheets or in any other form, and even when it contains rubber (caoutchouc), talc or other material, provided that it be for use in machinery.
266 (252)	Oats, thrashed.
263 (257)	Tiles of stone, of all kinds and dimensions, for floors.
618 (622)	Belts or bands formed of several layers of hempen cloth covered with pitch, for machinery.
312 (336)	Bars of Babbit metal.
298 (293)	Lever of iron with platform of wood and balances ( <i>balas</i> ) of brass.
262 (252)	Lime, common.
298 (293)	Padlocks of iron or steel which have a small part of other metal.
366 (378)	Siphons ( <i>canámporas</i> ) of tin, covered with any material whatever.
684 (692)	Covers ( <i>enpacetas</i> ) of canvas, with or without wood and iron for carriages.
366 (378)	Canteens ( <i>caramañolas</i> ) of tin covered with any material whatever.
694 (626)	Ceresina.
298 (293)	Locks of iron or steel which have a small part of common metal.
553 (571)	Glue, for carpenters.
33 (22)	Flutings ( <i>flutings</i> ) of cotton muslin, with or without cotton lace, and with small ornaments of silk.
270 (255)	Statues and busts of stone of natural size or larger dimensions.
261 (246)	Statues and busts of stone of dimensions less than natural size.
83 (68)	Threads of hemp, fine or coarse, of all colors, including such as is half twisted in balls or skeins, for the use of saddlers and shoemakers.
609 (527)	Bones, calcinated, calcined.
668 (652)	Rubber in sheets, on cotton cloth.
592 (575)	Cocoon soap.
226 (196)	Lentils.
591 (560)	Lye, concentrated.
466 (471)	Books, manuscript, bound in paper ( <i>á la rústica</i> ), or with ordinary binding.
263 (257)	Flags of stone of all kinds and dimensions for floors.
461 (454)	Woods, fine, in sheets ( <i>vencers</i> ).
418 (418)	Works for watches, when they come without cases, and strike or have any other combination.
419 (419)	Works for watches when they come without cases and do not strike or have any other combination.
535 (553)	Putty.
322 (336)	Babbit metal, in bars.
683 (676)	Oleina.
174 (168)	Handkerchiefs of wool of all kinds of textures, with <i>conefas</i> (fringe, trimming), squares or borders of silk, and with or without fringe of any material whatever.
603 (534)	Glue ( <i>pegadura</i> ) for shoes.
235 (241)	Fish, pickled, or in oil.
128 (117)	Mineral stone, free.—(Paragraph 17, Fraction I, Section I, of Tariff Laws.)
219 (222)	Fathers and down for pillows, mattresses, and cushions.
206 (222)	Sauces, prepared or in powder.
671 (655)	Bran of wheat or oats.
471 (463)	Dress shields ( <i>sobagueras</i> ) of rubber, lined with whatever material.
301 (320)	Envelopes, cloth-lined.
588 (595)	Solder of copper, bronze, or brass.
165 (178)	Sulfroleina.
361 (362)	Goods of cotton with mixture of false metal.
167 (180)	Goods of cotton, linen, or hemp, prepared by whatever process, for paintings or other uses.
298 (298)	Velvet when the warp is of silk and the woof of cotton, with nap of silk.
	Screws of iron, with nickel-plated heads.
	By the decree of December 23, 1885, the following articles were declared f. o. d.: Wire of iron, with clasps, for making packages; hoops of iron, with their rivets, for making packages; barrels and pipes of wood, empty; boxes of ordinary wood; bags, ready-made, ordinary, of all materials.
<i>Decree of March 1, 1886.</i>	
202 (202)	Succory, chicory, wild endive.
387 (292)	Wire of iron, woven, for fences.
224 (206)	Garlic, fresh.
458 (457)	Arches of wood for awnings for carts.
460 (452)	Hoops of wood for barrels.
668 (652)	Asbestos, with felt of wool, cotton, and pasteboard.
1 (4)	Bands of stockinet, with woollen fringe.
9 (1)	Woolen waste.
328 (297)	Gutters of iron.
298 (293)	Padlocks of iron, varnished.
693 (625)	Water piping of tarred canvas.
414 (411)	Vegetable cards.
236 (200)	Fresh meat of beef, pork, and fowls.
90 (95)	Table covers of beaten wool embroidered with silk.
666 (669)	<i>Cascate</i> -seed.
235 (241)	Caviare.
165 (178)	Ribbons or galloons of cotton and wool, with woof of silk.
627 (624)	Counterpanes of cotton, wadded.
656 (617)	Mortuary crowns of natural flowers.
56 (81)	Curtains of hemp, cotton, and wool, with ornaments of common metal.
8 (15)	Crinolines of cotton cloth.

Numbers.	Articles.
<i>Decree of March 1, 1886—Continued.</i>	
298 (293)	Knives and forks of iron, japanned.
291 (306)	Dados and bases of steel.
105 (10)	Curtain cord and clasps, plain.
25 (25)	Scapularies, with tapes and cloth of cotton.
105 (110)	Scapularies, with tapes and cloth of wool.
309 (300)	Pegs for shoes.
663 (652)	Felt of wool, tarred.
289 (304)	Iron in sheets for roofs.
181 (157)	Flowers, artificial, of silk, cotton, and ordinary metal.
985 (357)	Fire-works.
638 (611)	Frames of felt for hats.
639 (646)	Galloon of plated metal, up to 15 centimeters.
100 (307)	Ginger ale, in bottles.
301 (381)	Grenetina.
206 (222)	Barley flour.
549 (568)	Nestle's food or nourishing flour.
352 (350)	Buckles of iron, covered with silk.
	Fresh fish-eggs—free.
288 (373)	Filings or fragments of iron.
370 (377)	Bengal fire-works.
458 (457)	Wood, worked coarsely, for coach poles.
494 (482)	Valises of pasteboard, covered with cloth.
494 (482)	Valises of wood, straw-covered.
454 (458)	Furniture of ordinary wood, with ordinary cloth.
604 (626)	Wax figures or dolls for side-board or show-case.
635 (668)	Moss for stuffing pillows.
208 (220)	Bread of wheat flour.
472 (475)	Paper for filtering.
399 (345)	Paste for cleaning metals.
127 (116)	Hair of beef cattle.
37 (34)	Plaids of cotton.
342 (405)	Shawl-straps of linen (with), straps of leather and iron buckles.
645 (672)	Hair nets.
162 (175)	Elastic of silk, cotton, and rubber, with button and ring of common metal.
677 (681)	Sacks, made, ordinary, with hoops of wood.
589 (597)	Saltpeter from Chili or Peru.
657 (617)	Cloth of wood.
15 (48)	Cotton cloth embroidered in wool.
800 (537)	Tripoli earth.
540 (559)	Ink, indelible, for marking clothes.
276 (275)	Window glass, corrugated.
635 (668)	Shavings of wood for stuffing furniture.

By circular No. 2, of April 30, 1886, it is declared that clothing partially made is considered to be such as, put in pasteboard frames or boxes, or any other shape, is pinned, basted, or put together in such a way as to make it impossible, or at least inconvenient, through the injury it might cause the importer, to change the shape it comes in, and which, for this reason, cannot be measured or separated into the parts of which it is composed, such as ribbons, laces, buttons, &c., and in such case the rate corresponding to dresses partly made shall be applied.

But if such materials come in such a manner that no harm would result from their being measured or weighed according to the case, and if the lace or other trimming comes entirely separated, each article shall pay the rate assigned to it in the tariff.

By the revised vocabulary, published July 1, 1886, the following additions to, and corrections of, the vocabulary are made:

Number.	Articles.
588 (595)	Seltzer aperient (addition).
510 (520)	Camphor of azarum (add.).
523 (542)	Capsules, empty, of gelatine (add.).
442 (448)	Air-guns (correction).
254 (253)	Crucibles (cor.).
401 (454)	Cross-sticks of wood for telegraph posts (add.).
440 (439)	Nipples for percussion caps for fire-arms (add.).
265 (272)	Mirrors, with or without frame, of more than 30 centimeters on one side (cor.).
264 (271)	Mirrors, with or without frame, up to 30 centimeters one side (cor.).
668 (652)	Felt of cow hair to line buckets (add.).
105 (178)	Galloon of cotton and wool with wool of cotton and silk (add.).
9 (1)	Waste ( <i>hilaza sueta</i> ) for journals of railway cars (add.).
392 (399)	Bricks, not refractory, for cleaning metal (add.).
409 (394)	Wicks of woollen felt for locomotive head-lights (add.).
392 (399)	Powder of glass (add.).
598 (595)	Soda for yeast for bread (add.).
107 (180)	Velvet, when the warp is of silk and the wool of cotton, with nap of silk (add.).
279 (303)	Screws of iron, with nickeled heads (add.).
529 (550)	Trisulphate of lime (cor.).
297 (340)	Zinc in ingots (add.).

The decree of July 22, 1886, declares that copper wire, covered with cotton or gutta percha, or other analogous materials, for electric lights shall be imported free of duty, provided its diameter, not including the covering, be from Nos. 1 to 8, inclusive, and that it be proven before the customs authorities that it is imported for the purpose indicated.

By the circular of July 23, 1886, it is provided that—

(1) Vessels loading with wood in ports where there are custom-houses shall pay export duties on the number of *esterios* in the cargo.

(2) Vessels loading at points on the coast where there is no customs section to determine the *esterios* of wood loaded, shall pay their duties according to the tonnage of the vessel, multiplying by 2.83 *esterios*, which is the volume of each ton.

(3) Vessels, which, upon starting for any point on the coast, declare at once the number of *esterios* of wood which they propose to export, shall receive from the custom-house the respective permit, arranging that one or more of its employes pass on board the vessel to witness and measure the quantity of *esterios* declared, and by which base the duties shall be collected; but in order that this operation may take place the consignees of the vessels shall, according to article 280 of the Tariff Laws, give bonds to the satisfaction of the collector, to receive the employes on board, to give them due consideration, and to carry them to the place of their residence when the vessel has finished loading.

The decree of August 1, 1886, provides that model No. 7 of the Tariff Laws shall be changed in the terms indicated in the following model. This change to commence to be in force the 1st day of November next (1886), and that until said date the provisions made in the circular of the 6th of July last past shall remain in force.

#### MODEL NO. 7.

[Changed by the decree of August 1, 1886.]

Invoice of the following goods shipped by the subscriber on board the ———, captain ———, consigned to ———, merchant of ———, of the Mexican Republic, whither the vessel is bound.

Marks of each package.	Number of each package.	Number of packages, in figures and letters.	Class of packages.	Gross weight of each package, in figures and letters.	Total net weight of those which pay by net weight, in figures and letters.	Total legal weight of those which pay by legal weight, in figures and letters.	Total length of textures, in figures and letters.	Width of the textures, in figures and letters.	Number of pieces, pairs, or thousands, in figures and letters.	Material, class, and name of the goods.	Where the goods were produced.	Value of the goods, in figures and letters.

[Date.]

[Signature of shipper.]

NOTE.—Invoices shall be made exactly after this model, specifying all and each one of the packages which are shipped under it. The sum total of the number of packages shall also be expressed in letters, and the protests (declaration) which the shipper of the goods must make shall be written before the signature.

The circular of September 2, 1886, provides that in any exportation of goods imported into the Zona Libre as well as those which proceed from the interior of the country, it will be sufficient for the respective treasury official to place at the foot of each document a note stating where the goods came from, so that it may be seen at any time why the special stamps of the custom-house, required by article 276 of the tariff laws, were not attached.

Decree dated June 13, 1885.

ARTICLE 1. The right of internation to the interior of the Republic is conceded to importers of foreign merchandise, through places where there are frontier custom-houses, by any railway line established on the northern frontier. The contents of packages will not be subjected to an examination in the transit, which is under the



vigilance of the gendarmeria fiscal, provided the transmitters so solicit, and that they submit themselves to the following conditions:

(1) Packages of merchandise which are destined for internation, whether they be dispatched from frontier custom-houses, coming from Government or private warehouses, shall be surrounded with wires, fastened at their ends with lead seals.

(2) This shall be done by the custom-house from which they proceed after having examined the contents of the packages to see if they agree with the document expedited for their internation.

(3) When merchandise is thus dispatched, the employés of the gendarmeria fiscal, charged with the vigilance of the railway trains, shall be careful to examine such as comes destined to the places where they reside, to ascertain whether the seals put upon each package are found in good condition, and if the numbers, marks, and countermarks of each bale agree with the custom-house document which covers (protects) them, in which case they shall be delivered to the consignee without other requisite.

(4) Packages of merchandise which are in transit destined to places situated outside of the jurisdiction of the gendarmeria fiscal shall not be subjected to an interior examination in the last section where the goods leave the line occupied by the said gendarmeria, but said employés shall confine themselves to comparing the number of packages, marks, and countermarks, with the document which covers them, paying careful attention to the condition of the wires and seals on each of the packages.

(5) In case of a verified (or proven) denunciation, or in that of one of the packages being found broken, or with signs of having been opened on the way, or if it be observed that the lead seals placed on the wires are not those used by the custom-house from which the merchandise came, an examination of the contents shall be made, for the purpose of finding out whether these correspond with their description in the document of internation which covers them.

(6) For this revision the presence of the owner or consignee of the merchandise shall not be indispensable, but the presence of one of the political authorities of the place shall be sufficient. Said person shall, in union with the employés who make the investigation of the effects, sign a writing which must be drawn up in duplicate, in which the cause which made the proceeding necessary, as well as the result obtained, shall be stated. One copy of this writing shall be sent to the treasury department for its information.

(7) If upon the examination the merchandise shall be found to be in conformity, it shall proceed at once to its destination; but if it be found that the effects have been changed either in quality or quantity, the entire contents of each package in which any change has been made shall suffer the penalty of paying triple importation duties; the chief of the section retaining the fined merchandise and giving immediate notice to the commander of the zone, that he may inform by means of the press the owner of the goods, to the end that he may present himself within a period of thirty days at the office where the seizure was made to plead his rights.

(8) If the interested party does not present himself upon the summons, within the said period of time, the merchandise shall be considered abandoned, and they shall proceed with them according to the rules provided for such cases in the general tariff laws.

ART. 2. The value of the wire and lead seals shall be paid by the parties interested in the goods at the rate of \$10 per thousand seals.

ART. 3. Packages of merchandise which are internated without bearing the wires and lead seals treated of in fraction 1 of article 1, shall be subjected to an interior examination while in transit, according to the provisions of article 36 of the law of the 21st of March of the present year.

By the decree of June 29, 1885, it is ordered that in the additions which the consignees of vessels or merchandise have the right to make according to the provisions of articles 106 and 109 of the tariff, and to which additions the latter part of article 119 refers, the 25-cent stamp (of documents and books) shall be canceled only on the principal one of the four copies presented.

By circular No. 12, of July 18, 1885, it is provided that the fines, which the consignees of merchandise incur on their additions and rectifications, only apply to the additional part, and not to the total of the merchandise given in the consular invoice.

By the decree of August 1, 1885, articles 111, 112, 113, 114, and 115 of the tariff laws are amended as follows:

ART. 111. Additions or rectifications of merchandise on consular invoices shall be admitted by the collectors of customs, without imposing a fine, provided that in them they treat of the following data:

(1) When the additions or rectifications refer to data which are not necessary for the adjustment of duties.

(2) When a palpable error is simply rectified, such as changing the columns upon writing the invoice; placing, for example, the length in the place of the width, or the

weight in the place of the class, but giving all this data, and without changing the quantities given in the invoice.

(3) When the class, material, weight, and other necessary circumstances to describe the merchandise and to adjust their legitimate duties have been declared and it is simply rectified by the words *de las no especificadas* ("of those not specified").

(4) When in a consular invoice the weight of the merchandise is given in pounds, without determining the class of the latter, and it is rectified by adding that they are those of the country from which the merchandise came.

ART. 112. (1) Additions or rectifications which diminish the contents of the packages without thereby modifying the gross weight, shall be admitted by collecting the duties without any recharge and according to the rectification or additions.

(2) The rectifications or additions which diminish the contents of the packages diminishing also the gross weight shall be liquidated by the recharge of 5 per cent. on the amount of the duties on the merchandise declared in the invoice.

(3) When the additions or rectifications augment the contents of the packages without modifying the gross weight thereof, they shall be admitted by imposing a fine of 10 per cent. on the part rectified or added.

(4) When the rectifications or additions augment the contents of the packages, augmenting also the gross weight, the entry shall be liquidated by the recharge of 15 per cent. on the excess over that stated in the invoice.

(5) Additions or rectifications which change the class or nature of the merchandise, diminishing the importation duties, shall be liquidated by the recharge of 10 per cent. on the amount of the duties on the merchandise declared in the consular invoice.

(6) Additions or rectifications which change the class or nature of the merchandise, augmenting the importation duties, shall be liquidated by the recharge of 20 per cent. on the excess over that stated in the invoice.

ART. 113. Additions which are made, in case that the length, width, weight, number of pieces or thousands are omitted in the invoice of such merchandise as must pay by such designations, shall be admitted by imposing upon them the fine of 15 per cent. upon the duties which they cause.

ART. 114. When the descriptions of merchandise in consular invoices are made in such a manner as to make it difficult to ascertain their class, material, or nature, or when they are made vaguely with general designation, such as *merchandise, goods, cottons, linens, wools, silks, manufactures, articles from Paris, groceries, notions, drugs, textures, &c.*, collectors shall admit the additions with the recharge of 15 per cent. on the duties which the rectified merchandise causes.

In case that in the consular invoice the specification of the merchandise be entirely omitted, the additions shall also be admitted by imposing as a fine 20 per cent. additional on the duties which the goods lacking classification cause.

ART. 115. The additions or rectifications which the consignees of merchandise make in their consular invoices, not comprehended in articles 111 to 114, preceding, shall be admitted by imposing upon them the fine of 5 per cent. on the importation duty on the effects which may have been rectified or further described.

Circular No. 15, of August 12, 1885, declares that in regard to articles 426 to 429, inclusive, the meaning of the law was to show a distinction in penal judgments between that which might be called summary, or period of investigation, and the plenary or period of contention, establishing for the first, not only the right but the duty of all public employés of the treasury department to make known to the judicial authorities the crimes which they have discovered, to present the proofs of their existence, and to make known the authors, accomplices, and those who conceal them, that they may be brought to trial; and this is the object of article 426 of the tariff laws. This, however, does not obtain when the investigation having been made it becomes necessary to ask a suspension to make new investigations or formulate the accusation according to article 435, because all this requires legal knowledge which cannot be expected except in the public functionary charged by law to defend the interests of the treasury, which is the prosecuting attorney; and for this reason in article 429 care was taken to specify that in every case it should be said functionary only, who should formulate the accusation and who should be considered a party in the cause.

Circular No. 18, November 5, 1885, provides:

First. That the fines imposed in the custom-houses when captains have not complied with the provisions of articles 25 and 26 of the tariff in making their consular manifests shall only take effect when approved by this department.

Second. That the fines imposed up to this date on the captains or consignees of vessels which, loaded or in ballast, may have arrived at any one of the ports of this Republic without having complied with the requisites of article 29, of the same tariff, are condoned provided that they have not already been approved by this department.

Third. That the captain who in the future does not comply with the provisions of the already cited article 29 be punished with a fine of from \$25 up to \$500 if the vessel carries merchandise, and from \$5 to \$100 if the vessel comes in ballast.

Circular No. 19, of November 24, 1885, provides that the fines imposed to date upon the captains of vessels for the absolute failure having a consular manifest may be condoned provided that this department has not already given its approval.

It is also ordered that, in the future, all vessels which may arrive in the ports without the respective consular manifest be fined as provided in the third paragraph of Circular No. 18 already mentioned.

Circular No. 1, of March 18, 1886, gives the list of the persons named by the city council of the city of Mexico, in accordance with article 167 of the tariff, to act as experts for the year ending June 30, 1887:

*Cloth manufactures.*—Guillermo Portiella, Capuchinas, No. 13; Pedro Suinaga, Cadena No. 20; Benito Arena, Plazuela de Madrid; Antonio Basagoiti Capuchinas No. 24; Martin Castillo y Cos., Bethlemitas No. 12.

*Linens drapers.*—Argentin Fandon, 1<sup>a</sup> de la Monteriella No. 3; Antonio Aubert, Portal de las Flores Nos. 2 and 3; Francisco Arzamendi, 3<sup>er</sup> Orden de San Agustín No. 2; Martín Irigoyen, San Agustín No. 8; Max Chauvet, Monterilla de San Bernardo; F. y R. de Frueba, Cadena No. 14; F. Hurtado Espinosa, Flamenecos No. 1; Valente A. del Castillo, Puente de Palacio No. 10; Luis Rübcke, 2 de la Monterilla No. 3; Desiderio Grane, Angel No. 2; José Gonzalez, "Ciudad de Londres;" Leon Costes, "Primavera;" José M. Haro, San Bernardo No. 18; E. Delorme, 2<sup>a</sup> de Plateros No. 1.

*Grocers.*—Manuel Vidal, Joya y Jesus (esquina); Ambrosio Sanchez, 3<sup>a</sup> de San Francisco No. 1; Ramon Ponton, Rejas Balvanera No. 3; F. San Martín, Soto y Portillo de San Diego (esquina); Valentin Uhink, Don Juan Manuel No. 22; Alberto Ytuarte, Coliseo No. 2; Alonso Noriega, Puente de Jesus Maria No. 7; Manuel Casso, Portal de Agustinos y Palma; Luis Lavie, Don Juan Manuel No. 7; Victoriano Aceves, Puente de la Peña No. 7; Quintin Gutierrez, Seminario (esquina); José Toriello Guerra, Jesus Nazareno No. 2; F. Marroquin, 1<sup>a</sup> de San Francisco y Verzara; Ignacio de la Torre, Tiburcio No. 1; Francisco Zepeda, 2<sup>a</sup> de San Francisco No. 7; Luis G. Perezcano, Portal del Aguila de Oro No. 4.

*Drugs.*—Julio Labadio, Profesa No. 5; Manuel Soriano, Joya No. 10; Agustín Vargas, "El Elefante," Espiritu Santo; J. Rio de la Loza, 1<sup>a</sup> de San Juan (esquina); Guillermo Lozano, Profesa; J. M. P. Llano, Lerdo No. 6.

*Earthenware, crystal, and glass.*—José Gomez de la Vega, Santo Domingo; Alberto Casellier, "Jalapeña," Portal de Agustinos; Miguel Alvear, Escalerillas No. 19; Manuel Espejel, Portal de Agustinos No. 5; Tomas del Pino, Portal de Agustinos; Miguel Jimenez, 2<sup>a</sup> de la Merced No. 28.

*Notions and hardware.*—Gualterio Herrmann, Palma No. 4; José M. del Rio, Palma No. 6; E. Delarue, 2<sup>a</sup> de Plateros No. 1; Santiago Lohse, Don Juan Manuel No. 4; Miguel Gutierrez, Puente de Palacio No. 11; Herman Gahrts, Tlapaleros No. 19; R. Rotter, Palmer Nos. 9 y 10; Carlos Leffmann, Palma No. 12; Eleoro Lopez, Cadena y Angel.

*Paper, books, &c.*—Juan Benfield, 2<sup>a</sup> de la Monterilla, No. 12; Manuel Sanchez Navarro, Puente del Espiritu Santo; Ricardo Sainz, "Libro Mayor;" Federico Lüdert, Profesa; Manuel Guerra, Cinco de Mayo.

*Brokers.*—Mannuel Dargin, Tiburcio No. 24; José Anzoátegui, Empedradillo No. 3; Emilio Múvero, 1 de Plateros No. 3; Justo Santa Marina, San Agustín No. 10; T. Müller, Coliseo (frente al Teatro Principal); Juan Goyenne, San Agustín.

*Agriculturists.*—Francisco Betti, Ribera de San Cosme; Eduardo Cuevas, Callejon de Santa Clara; Monseñor Eulogio G. Gillow, Colonia de los Arquitectos.

*Hatters.*—Pascual Medina, "El Conejo;" Modesto Marguez, Portal de Mercaderes; P. Cuadra, Puente de Santo Domingo; Federico Zölly, Portal de Mercaderes.

*Blacksmiths.*—Gregorio Aguirre, Canoas No. 1; Pedro Hernandez, Puerta Falsa de Santo Domingo; Francisco Enciso, 2<sup>a</sup> de San Lorenzo No. 7; Felix Carrillo, Chavarria No. 17.

*Carpenters.*—Felipe Mendoza, Juan Carbonero, Antonio Franco, San Juan de Letran; Bernardo Benac, 2<sup>a</sup> de San Francisco; Tomas Hernandez, Donceles No. 4.

*Silver-smiths.*—Guadalupe Carrillo, Ortega; J. Velasco, San José el Real; Alejandro Gutierrez, Montepio; J. Lagarrigue, Empedradillo y Plateros.

*Watchmakers.*—Francisco Vasquez, Profesa; Tomas Hernandez Aguirre, Profesa; Vicente Pagaza, San José el Real; Herman Lane, esquina de San Francisco y Espiritu Santo.

*Tailors.*—Enrique Miviello, 2<sup>a</sup> de San Ramon No. 5; José M. Carmona, Escalerillas y Santo Domingo; Luis Sarre, Coliseo y Espiritu Santo; Rafael M. de Lombardini, Santa Clara.

*Shoemakers.*—Apolonio Reyes, 1<sup>a</sup> de San Francisco No. 2; Diego Leon, Seminario; Francisco Trejo, San Francisco y Profesa; Pascal, "El Bazar," Espiritu Santo.

**PITA FIBER OF HONDURAS.***REPORT OF CONSUL HERRING.*

The pita plant is not cultivated or prepared for market anywhere in this consular district, nor is it cultivated anywhere in Honduras except on the north coast in the district of Consul Burchard, and some, perhaps, near Ruatan, where he resides. As I have no authority to require him to furnish me the facts, I would suggest that the Department could obtain a fuller and more satisfactory report from that consulate; and as a better one can thus be obtained, I will not delay this report for such information as can be gathered concerning it here.

As indicating what this Government is willing to do to encourage the culture of the pita, I forward herewith as Inclosure No. 1 a copy of a concession granted William C. Burchard and Floyd B. Wilson. Inclosure No. 2 is a translation. This Mr. Burchard is the aforesaid consul, and said Wilson is a citizen and resident of the city of New York. I am not aware that they ever complied with the terms of this concession, or accomplished any good under it, and from what follows, I conclude they did not.

For the same purpose, and as it is the only law ever in Honduras on the subject, I also transmit herewith, marked Inclosure No. 3, a copy of a Government decree, of the 28th of December, 1877. Inclosure No. 4 is a translation. The privileges referred to in the ninth, being the last article of the decree, which are the same referred to (but by mistaken date) in article 3 of said concession, are, briefly, that agriculturists may import, free from all duties, all articles for agricultural purposes, and every person, day-laborer, and all engaged and employed in agriculture shall be exempt from military service, and guaranteed a continuous, uninterrupted right to devote their whole time to this pursuit; and such general unnamed privileges as can be consistently granted by "the Government (that) takes the agricultural industry under its special care."

The plant grows spontaneously in this country, but on rich lands in the bottoms, and rarely upon the hills or mountains. None grows in this department, or near here; and hence there cannot be procured the specimens that ought to, and necessarily would accompany any exhaustive report.

The plants can be grown successfully as close together as they can be cultivated. The usual height is four feet. The stalks will average eight leaves. The fiber is produced from the leaves, none from the stalk. The leaf and its fiber is from twenty-five to thirty inches in length. It grows throughout the year, but thrives best in the rainy season, which commences in June or July (owing to locality), and continues six months. Any who desire may gather it from the woodlands, the landowners charging nothing for the privilege. Only the most primitive and crude process of handling is known, and it requires a big day's work for one person to cleanse as much as twenty pounds. The necessary labor can be had for 50 cents a day for each laborer. The raw material has no market value here. A few gather it for manufacturing by their own hands into such articles for sale as ropes, sacks, hammocks, and "arganillas," or a kind of saddlebag. Its tensile strength gives it great value as a sewing thread, formerly much prized

by saddlers and shoe and boot makers; but now its use is almost entirely abandoned for this purpose, since the introduction into the country of the cheaper thread from the manufactories abroad.

With its tensible quality and tensile strength, it has also, according to some informants, a resinous substance, that imparts to it a strong resistance against rotting from exposure to water or moisture; and this would peculiarly adapt it for fishing-lines, nets, cables, tent-cords, sail-ropes, and such like articles. It is believed that under proper cultivation and treatment it may be applied or used as material for handkerchiefs and cravats, &c., and such upholstery as towels, tablecloths, napkins, curtains, and tidies. There is little known here as to what degree of fineness the fiber is susceptible of improvement. It is said, however, that a Mr. Henry Weckler, of Philadelphia, procured some of it, out of which he had manufactured a few handkerchiefs of snowy whiteness and excellent quality.

Its principal growth is in the department of Santa Barbara, El Paraiso, Copan, Yoro, and Colon. It never grows spontaneously in large quantities in any one place in Honduras.

In the year 1882 and 1883 there were grown 21,887 plants of pita in the department of Santa Barbara. The product of these was valued at one thousand seven hundred and eighty-seven dollars.

Except this little, solitary item of so long ago, there is absolutely no data to show either the amount produced or the amount consumed for domestic uses, and, so far as the records show, none was ever exported from this country.

Notwithstanding the efforts of this Government to introduce its culture, as shown by inclosures herewith, it has never been an article here of any commercial value, and but little attention is paid to it. This is so, first, because the population is so sparse as not to require the same diversity of pursuits as in other countries where it grows; second, because of the want of transportation facilities, there being no navigated streams in the country, and no roads of any kind, but only mountain trails and mule paths or bridleways; third, there are no machines for preparing it for easy transportation, or no decorticating machinery to extract the fiber; fourth, there is no factory in the whole country to convert it into articles of use.

As these obstacles are not likely to be removed in the near future, it is useless now to conjecture whether the pita will soon or ever furnish a profitable industry in Honduras.

D. W. HERRING,  
*Consul.*

UNITED STATES CONSULATE,  
*Tegucigalpa, September 22, 1886.*

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[Translations.]

SECRETARY'S OFFICE OF PUBLIC WORKS,  
*Tegucigalpa, May 28, 1881.*

In consideration of the petition presented to the Government by Messrs. William C. Burchard and Floyd B. Willson, North American citizens, stating that, to develop the natural wealth of the country, they intend to form a corporation for the labor and culture of pita and other fibrous plants in the department of Mosquitia, as also for establishing different other industrial and agricultural undertakings in the department above mentioned, and that as a compensation they ask the Government to grant them all the necessary concessions and privileges to carry this enter-

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NOTE.—A report of Consul Burchard on the pita fiber will be found on page 376 of this issue.

prise out; and whereas the department of Mosquitia is in a really exceptional condition, on account of its scanty population and of its entire absence of capital, for which reasons it is desirable to have companies established on its territory, which, by means of their skill and money, may develop the whole of the natural wealth of said department; Therefore the President agrees:

ARTICLE 1. To grant to Messrs. W. C. Burchard and Floyd B. Willson the right of forming a corporation in the United States of America, with the purpose of establishing agricultural and industrial enterprises in the department of Mosquitia. The following concessions are granted to said company or its agents. They are allowed:

(1) To gather, to cultivate, and extract the fiber called pita, or any other fibers of the same nature, that may be found or planted (by them) in the department of Mosquitia.

(2) To set buildings and machinery in any part of that territory, either on the coast or on the sides of rivers.

(3) To cultivate tropical fruit, and to become owners of the lands they may cultivate without discontinuance during a period of five years, to reckon from the day when they begin said cultivation.

(4) To cut freely the necessary wood for machinery, buildings, or private purposes.

(5) To gather and export free from duties any wild fruit growing in national lands, excepting casahuate or India-rubber, cocoanuts, corosos, and woods. On these latter articles the company shall not be allowed to establish any kind of speculation or undertakings whatever without a previous contract with the Government.

(6) To import free from duties machinery, agricultural implements, wood for buildings, nails, furniture, sail or steam vessels, and other necessities for the exclusive use of the company.

ARTICLE 2. The ships of the company will be exonerated from paying port duties all along the sea-shore of the department of Mosquitia.

ARTICLE 3. The company will enjoy for fifteen years the above concessions, and also the privileges and rights granted to cultivators by the decree of 27th April, 1877. After said fifteen years are elapsed the company will make a new agreement with the Government.

ARTICLE 4. If within eighteen months, to reckon from the present date, Messrs. William Burchard and Floyd B. Willson have not formed the company nor have begun the works, then the concessions granted on their behalf shall stand void and without effect.

Be it known and registered.

Signed by the President.

GUTIERREZ.\*

#### SECRETARY-GENERAL OF THE CONSTITUTIONAL GOVERNMENT,

*Tegucigalpa, December 28, 1877.*

Considering that the plant bromella (silk grass), commonly known among us by the name of pita, is found in wild bunches for several miles along the north coast, and for considerable distance in the interior; that this plant contains a fibrous material or textile superior to the Russian hemp, that costs so very great a price in the European markets; that said plant, which to-day, is a spontaneous product, can be considerably increased and made better in marketable quality by cultivation; that it is very easy to cultivate, and easy to profit by the textile material it contains, and that its cultivation would give a considerable source of income to many people, and constitute an important branch of exportation, therefore the President

#### DECREES.

ARTICLE 1. Any native or foreigner may denounce the national or municipal lands that contain bromella or pita, before the justice of the peace of the respective jurisdiction where it grows.

ART. 2. The person denouncing must show by means of written declaration before the municipal justice of the peace of the jurisdiction in which the denounced land is found, the facility or means that the interested party has to cultivate and improve the bromella.

(2) He must offer to introduce the machinery necessary for the labor and culture of the pita, not later than eight months from the day he acquired the land, either by ownership or rental contract.

(3) If it is municipal land he must agree to pay its market value, fixed by appraisal for ownership, or its rental value fixed by contract.

(4) He must obligate himself to increase the amount of pita one-tenth each year for ten years.

\* Foregoing translation made by Professor Meanny, Government interpreter and translator.

ART. 3. The denunciation, made in the manner indicated, and accepted by said respective justice of the peace, the interested party, if the land was municipal property, will petition the municipality for it and the municipality will sell it to him at previous measurement and price, or grant it to him on rent. If the land is national property the interested party will petition the Supreme Government for it, and this Government, in view of the foregoing denunciation and measurement of land, and being informed previously by the respective governor, through the minister of public works, will grant him the ownership of said land and the title that corresponds.

ART. 4. The justice of the peace nearest the land denounced, associating with himself an intelligent land surveyor, will make the measurement, collecting the lawful fees therefore.

ART. 5. In case the justices of the peace, or the municipalities, disregard the just petitions of those denouncing lands, these petitions upon being presented to the Supreme Government with information of such disregard from the governor where the land lies, will be definitely resolved upon and either granted or denied.

ART. 6. He who denounces and does not introduce machinery for the labor and culture of the pita, or who does not commence its culture within the first eight months from the time he rented or purchased the land, will lose his right and the denounced land will be open to any other person, unless the one who has denounced can establish by clear proof that he was not in fault.

ART. 7. The person who undertakes the culture of the pita, and who without justifiable cause fails any year to make the increase of the tenth part spoken of in article 2d will be required to pay for the first year of failure as much as \$25, and in the subsequent years for each failure as much as \$30. These amounts to be turned into the treasury of the respective municipalities where such failures are made.

ART. 8. During the ten years counted from this date there will not be imposed any tax or contribution upon the land on which the pita is cultivated, and during the same time no custom duty will be imposed upon the exportation of this article.

ART. 9. The privileges of the agricultural law of the 29th of April of last year, just passed, conceded to cultivators of coffee, &c., are extended to the cultivators of brumella.

Be it known and registered.

Signed by the President.

ROSA.

## MINERAL IRON ORE OF GREECE.

REPORT OF CONSUL MOFFETT, OF ATHENS.

Deposits of iron are found in various parts of Greece; in Eubœa, near Cape Matapan, in the islands of Cythnus, Chiliodromi, Seyros, and Seriphos. In small quantities it is also found at Ergasteria, or Laurium, but the principal mines are in the small rocky island of Seriphos. The supply here is practically inexhaustible.

In the year 1865 the Société Metallurgique Hellénique, under the honorary presidency of His Majesty the King of Greece, was formed for working this deposit. After expending the sum of 1,000,000 drachmas (\$193,000) the rights of this company were sold to the Messrs. Syngros & Serpieri for the sum of £50,000 sterling (\$486,650). A new French company was then formed under the title Société des Usines des Seriphos, et de Spilia Zeza, with a nominal capital of 3,000,000 francs (\$579,000), and having its headquarters at Paris. In its turn this company, having expended on the works some 800,000 francs (\$154,000), has let out the mining, transportation, and loading to a German engineer, Emile Grohmann. The present production of the works is to the amount of about fifty thousand tons of ore per annum, which is sold, free on board ship at Seriphos, for 7 francs (\$1.35) per ton. Of this amount Grohmann receives 5 francs (96 cents) per ton for expenses of mining, transportation, &c., and the remaining 2 francs (39 cents) is the company's profit. At present there are employed in the works about one hundred laborers at wages ranging from 3 francs to 4 francs per day (57 cents to 77 cents). Ships can call in any weather, and lie alongside the wharf for loading.

The quality of the ore is shown in the analyses appended to this report made by the well-known metallurgist, Mr. John Pattinson, of Newcastle. The company guarantees 50 per cent. of pure metal, and the last shipped had 55 per cent.

The principal market for the ores here mined is France. The United States also has taken a portion, and lately there has been a marked increase. The month of September ultimo shows two shipments of the Seriphos ores, consigned to Latasa & Company, of New York, to the amount of 5,600 tons, at a valuation of 97,938 francs, or about \$18,914 gold.

WM. H. MOFFETT,  
Consul.

UNITED STATES CONSULATE,  
Athens, October 21, 1886.

*Analyses of the ores of Seriphos made at Newcastle by Mr. John Pattinson.*

[Société Métallurgique Hellénique, under the honorary presidency of His Majesty the King of Greece.]

Constituents.	Yellow ores coming from the mines Mavra, Roldia, Aeti, Carvouniakor.				
	(1)	(2)	(3)	(4)	(5)
Peroxide of iron .....	80.64	81.64	79.57	76.48	77.29
Protoxide of iron .....	0.98	1.41	.....	0.45	Trace.
Peroxide of manganese .....	0.95	1.75	0.81	0.57	0.47
Alumin .....	1.20	0.40	1.40	2.10	1.40
Lime (chaux) .....	1.90	2.55	0.97	1.40	1.37
Magnesia .....	0.68	0.51	0.34	0.41	0.31
Sulphate of baryta .....	.....	.....	1.16	1.79	0.73
Carbonic acid .....	.....	0.76	.....	.....	.....
Silica .....	7.23	5.43	6.94	5.38	5.54
Sulphur .....	Trace.	Trace.	0.07	0.12	0.11
Phosphoric acid .....	0.07	0.05	0.11	0.11	0.10
Water combined .....	5.68	5.08	9.20	8.06	10.15
Moisture .....	0.81	0.76	.....	2.82	2.42
	100.10	100.34	100.07	99.66	99.89
Iron metallic .....	57.20	58.25	55.70	53.00	54.10
Manganese metallic .....	0.61	0.89	0.19	0.48	0.80

Constituents.	Dark red ores coming from the mines Covaka, et Mavrais Spiliats.				
	(1)	(2)	(3)	(4)	(5)
Peroxide of iron .....	65.57	66.07	67.14	65.14	62.43
Protoxide of iron .....	.....	.....	.....	.....	.....
Peroxide of manganese .....	8.73	6.94	4.52	6.61	7.43
Alumin .....	0.20	0.40	1.80	1.10	0.70
Lime (chaux) .....	8.05	9.83	6.70	7.47	8.59
Magnesia .....	0.43	0.89	0.35	1.26	0.59
Sulphate of baryta .....	.....	.....	.....	.....	.....
Carbonic acid .....	6.80	6.90	8.96	6.87	7.83
Silica .....	3.47	3.67	8.27	5.77	4.00
Sulphur .....	0.02	0.06	0.03	0.05	0.01
Phosphoric acid .....	0.07	0.06	0.02	0.04	0.05
Water combined .....	4.43	4.61	5.21	4.07	3.77
Moisture .....	1.57	1.37	1.88	1.51	3.00
	99.99	100.27	99.88	99.89	99.80
Iron metallic .....	45.90	46.25	47.00	45.60	43.70
Manganese metallic .....	5.52	5.62	2.92	4.29	4.70



*Analyses of the ores of Seriphos made at Newcastle by Mr. John Pattinson—Continued.*

Constituents.	Red ores coming from the mines Almiros, Potamos, and Countouro.				
	(1)	(2)	(3)	(4)	(5)
Peroxide of iron .....	65.56	67.00	63.79	62.86	59.78
Protoxide of iron .....					
Peroxide of manganese .....	3.57	3.27	3.29	3.60	3.43
Alumen .....	0.40	0.60	0.40	0.30	0.10
Lime (chaux) .....	11.69	11.24	14.50	13.30	14.06
Magnesia .....	1.04	1.20	0.50	0.70	0.64
Sulphate of baryta .....					
Carbonic acid .....	8.70	8.83	10.40	9.40	11.00
Silica .....	3.40	3.10	1.60	2.40	2.60
Sulphur .....	0.03	Trace.	0.01	0.02	0.02
Phosphoric acid .....	0.07	0.03	0.07	0.06	0.05
Water combined .....	3.89	2.55	1.98	3.11	3.64
Moisture .....	1.48	2.18	3.02	4.30	5.05
	100.03	100.00	99.65	100.05	100.29
Iron metallic .....	46.00	46.90	44.65	44.00	41.85
Manganese metallic .....	2.25	2.07	2.08	2.28	2.19

## OBSERVATIONS.

(1) Each one of the above analyses has been made from average samples taken from entire cargoes of 1,000 and 2,000 tons of ores sent to Newcastle on steamers: so that these fifteen analyses may be considered as giving within reasonable exactitude the average of between 23,000 and 25,000 tons of ore.

(2) Since the ores of the mines above named have been sent and smelted at Newcastle, new mines, perhaps still more important, have been opened on the property of the Société Métallurgique Hellénique, and among others the mine of Mondaki, remarkable for the richness and purity of the ore.

(3) By a proper mixture of the three kinds of ore A, B, C, and on account of the great quantity of lime intimately mixed with the kinds B and C, they succeeded in smelting at Newcastle the ores of Seriphos, without adding flux or any other smelter in the blast-furnace,\* and to produce only 400 kilos of slag to the ton of casting.

(4) The fusion in the blast-furnace\* of about 40,000 tons of ores sent so far to Newcastle has given an average of 50 per cent. in the casting.

(5) The Société Métallurgique Hellénique has actually on the wharves at Seriphos a sufficient stock of ore to meet the demands for ore that may be addressed to it.

*Analyses of the castings in the foundries of the Royal Greek Iron Works, near Newcastle, with ores of Seriphos, made by Mr. John Pattinson.*

Constituents.	Analyses extracted from the report on the progress of the iron and steel industries in foreign countries, I, 1875, by David Forbes, F. R. S.					Other analyses, with date of taking of the samples.				
	(1) Casting for Besse- mer.	(2) Casting for Besse- mer.	(3) Casting for mold- ing.	(4) Casting for forge.	(5) White casting.	(1) Sample. Dec. 6, 1873.	(2) Sample. Feb. 27, 1874.	(3) Sample. Mar. 11, 1874.	(4) Sample. June 20, 1874.	(5) Sample. Sept. 11, 1874.
Iron metallic (by comparison) † ..	91.31	92.32	92.35	94.20	96.72	90.53	93.43	92.60	92.78	91.48
Carbon combined ..	0.38	0.51	0.38	0.56	1.80	0.30	1.60	0.50	0.48	0.40
Carbon graphite ..	3.64	3.11	3.21	2.57	0.14	3.00	1.17	2.21	3.16	3.41
Manganese .....	3.08	2.58	3.31	1.73	0.83	3.16	3.06	2.25	2.62	2.64
Silicium .....	1.54	1.36	0.63	0.85	0.31	2.93	0.64	2.25	0.89	1.94
Sulphur .....		0.05	0.04	0.03	0.13	0.02	0.02	0.13	0.02	0.06
Phosphorus .....	0.05	0.07	0.08	0.06	0.07	0.06	0.08	0.06	0.05	0.07
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

## OBSERVATIONS.

(1) All these castings have been made with a mixture containing one part of the ores A, one part of B, and two parts of C.

(2) This casting has obtained the first medal at Leeds, Exposition 1875, and a gold medal at Paris, Exposition 1875.

(3) The selling price of this casting, even during the great crisis that we are going through, has not been less than £5 (sterling) per ton, and that while the best hematite castings of West Cumberland did not obtain a higher price than £3 7s. 6d.

(4) The quantity of manganese contained in these castings has fitted them to be used in the manufacture of a superior quality of steel without adding spiegeleisen.

(5) All these castings have been used in the manufacture of fine steels in any one of the several processes in use; especially they excel in the superior quality of the casts obtained, as well as in the great tenacity and malleability of the rolled iron made with them. In some cases they have been employed to advantage in replacing the best cold castings made in England.

\* Haut-fourneau.

† Par différence.

## RUSSIAN PETROLEUM AT AMSTERDAM.

REPORT OF CONSUL ECKSTEIN.

Rather extensive preparations are now being made at this port, having for their object the introduction and sale of Russian petroleum in this country.

The Messrs Moes, Crookewit & Co., general agents for the Netherlands, of the Naphtha Productions Company, Nobel Brothers, of St. Petersburg, are now erecting here, in a suitable and convenient locality, several small buildings and a sheet-iron reservoir, all intended for the importation of petroleum in bulk.

The reservoir will be mounted on a timber-frame 3 meters high, resting upon a foundation built after a certain plan, prepared by local architects, and its dimensions will be: height 10 meters by 20 meters in diameter, and it will be capable of holding about two million liters of petroleum.

The foundations and frame-work are ready, and the reservoir is in course of construction at the royal factory of steam and other implements at Amsterdam.

The petroleum is to be brought here in "tank-steamers," and to be pumped from the "boats" into the reservoir, which, it is calculated, has capacity to store about one cargo and a half.

The establishment will communicate with the railway by a junction-line and as the reservoir is at a sufficient elevation, cistern-wagons can and are intended to be filled directly from the reservoir.

When taking into consideration that all these arrangements are being made to serve only a temporary purpose, it leads to the conclusion that the parties interested in the enterprise must have great confidence that it will prove successful, in as much as the establishment now being set up will in about another year have to be removed to another locality, where the city of Amsterdam is now making or constructing a new petroleum harbor and docks.

The Messrs. Moes, Crookewit & Co. inform me that they expect to receive their first consignment of the Russian product in the course of about a month or six weeks, and that subsequently importations of it will regularly take place, in accordance with the demand for and the trade in the article in the markets of Holland.

The matter as to how the importation of Russian petroleum—in the manner intended—is likely to affect the imports trade and consumption of the American products, engages my attention.

On conferring upon the subject with parties here most conversant therewith and best able to judge, I found them to be rather reluctant to express any really decided opinion, at this time, which leads me to believe that the possibility is not at all precluded that in the near future our exporters of petroleum may have to face and contend against a more or less formidable competition in this and other markets.

D. ECKSTEIN,  
*Consul.*

UNITED STATES CONSULATE,  
*Amsterdam, September 23, 1886.*

**NEW CONDITIONING HOUSE AT BRADFORD.***REPORT OF CONSUL GRINNELL, OF BRADFORD.*

There has been for years a "conditioning house" established under governmental or municipal control in the more important continental manufacturing cities of Europe.

The conditioning house is organized for the purpose of testing and certifying to the proper weight, length and condition as to moisture of silk, worsted, woolen and other yarns, as well as combed wool.

The Congress of Paris in 1878 established the schedule of percentages of moisture and oil given below, to be added after absolute dryness. "The conditioning shall be optional, but if either party request it, it shall be obligatory."

Combed wool, 18½ per cent.; silk, 11 per cent.; spun yarn, 17 per cent.; cotton, 8½ per cent.; flax hemp, 12 per cent.; jute, 13¼ per cent.

The mode of procedure is somewhat as follows: The entire purchase is delivered at the conditioning house with its alleged weight, and two numbers to represent the buyer and seller so that the officers do not even know their names.

Several samples are selected from different packages, and after conditioning, *i. e.*, first reducing the material to absolute dryness, thus allowing it to absorb moisture enough to accord with the schedule, a certificate is made out for each party in interest and then only the invoice is made in accordance and accepted. The charge is trifling, 2 francs or 2.50 francs equal 40 cents or 50 cents.

At Roubaix, called the Bradford of France, the conditioning house has been so successful, netting the municipality nearly \$30,000 last year, that at the earnest and persistent solicitation of the merchants of the Chamber of Commerce here (not the spinners, some of whom bitterly oppose it), the Bradford municipality have taken up the plan of a conditioning house here, and yesterday they formally agreed to apply to Parliament for the necessary power and authority to carry out the purpose and create the Bradford conditioning house.

That this is an important and welcome piece of intelligence to us will be made manifest when it is stated that upward of \$1,750,000 in value of worsted (and mohair) yarns were exported hence to the United States during the year ending September 30, 1886, and that they were liable to be, and in some instances were weighted with moisture beyond what they would naturally have absorbed, inquiries and complaints from two of our ports has sufficiently proved.

At all events it will give confidence to our yarn buyers, that their purchases can be certified to as to moisture by a competent and unbiased authority.

WILLIAM F. GRINNELL,  
*Consul.*

UNITED STATES CONSULATE,  
Bradford, October 16, 1886.

## CHANGES IN TARIFF OF VENEZUELA.

## REPORT OF CONSUL BIRD.

An important change in the tariff of Venezuela, published on the 11th instant, effectually prohibiting the importation of foreign lumber, is promulgated in the following decree:

The President of Venezuela, exercising the authority granted to the Executive Power in Article X of the law of the tariff of importation, and with the affirmative vote of the Federal Council, decrees:

ARTICLE I. Timber prepared for naval construction and logs of pine, pitch-pine, or of any other ordinary wood, imported from abroad will be assessed for duties under the second class of the tariff.

ART. II. Planks, beams, and joists of pine, pitch-pine, or of any other ordinary wood, unplanned and unmatched, imported from foreign countries, will be assessed for duties under the third class.

ART. III. The custom-houses of the Republic will begin to give effect to this decree thirty days after its publication in the Official Gazette of this city.

ART. IV. The Minister of Finance is charged with the execution of this decree.

Granted, signed, sealed, and countersigned in the Federal Palace in Caracas, September 29, 1886, year 23 of the Law and 28 of the Federation.

The woods enumerated in Article I of the above decree that have been hitherto admitted free of duty are by this decree taxed at the rate of ten centimes of a bolivar per kilo, or 19.3 cents American gold for 22 $\frac{1}{100}$  pounds avoirdupois.

The woods enumerated in Article II of the above decree that have been hitherto admitted at the rate of ten centimes of a bolivar per kilo are now taxed at twenty-five centimes of a bolivar per kilo, or 19.3 cents American gold for 8 $\frac{1}{100}$  pounds avoirdupois.

In addition to the prohibitory tariff on lumber recently decreed by the President of Venezuela, the following changes have been gazetted:

## MACHINERY.

United States of Venezuela, Ministry of Internal Improvements, Direction of Territorial Riches, Caracas, October 13, 1886, year 23 of the Law and 28 of the Federation.

*Resolved*, Having in mind that, in exemptions from tariff duties conceded to manufacturers by executive resolutions or in the form of contracts for the importation of machinery, appurtenances, raw material and other accessories, there has been kept in view the object of protecting the planting of new industries in the country, which object ceases after they have been established and enjoy proper life, the President of the Republic, with the affirmative vote of the Federal Council, resolves: that exemption from tariff duties will be only conceded for the importation of such machinery, appurtenances, raw material and other accessories as are destined, in the judgment of the national executive, to the establishment of new industries, and in no case for such as may be already established and are able to live without the necessity of official protection.

The custom heretofore observed has been to admit, free of duty, all from classes of machinery. Admission upon such terms, as will be seen this resolution, must hereafter depend upon the pleasure of the President.

## MONUMENTS AND TOMBS.

The President of the Republic, with the affirmative vote of the Federal Council, resolves: that from this date, exemption from tariff duties will not be conceded for the importation of monuments and tombs; but that duties shall be paid upon the same according to the material of which they may be composed, in accordance with Law XXIII of the code of Hacienda.

WINFIELD S. BIRD,  
Consul.

UNITED STATES CONSULATE,  
Laguayra, October 23, 1886.

## NOTES.

**Condition of the wool trade.**—Consul Charles P. Williams, of Rouen, France, under date of October 7, 1886, writes as follows :

An improvement, slow but regular, is noted in the condition of tissues of carded wool.

The fabrics of combed wool continue to meet with favor. At the north numerous sales at fair prices, mostly on English account, have been made.

Mazamet has sent off during the month of August 146,840 kilograms of cloth and 499,934 kilograms of other woollen goods. During the corresponding month of last year the deliveries were 205,070 kilograms of cloth and 299,429 kilograms of woollen goods.

The following table indicates the operations of the five great wool centers of the north of France during the month of August last compared with the corresponding period of the year 1885:

Places.	Combed wool.		Woolen yarn.	
	August, 1885.	August, 1886.	August, 1885.	August, 1886.
Reims .....	577, 054	846, 312	74, 064	68, 364
Roubaix .....	1, 315, 379	2, 419, 075	209, 292	421, 044
Tourcoing .....	919, 998	1, 888, 409	221, 118	197, 369
Amiens .....	72, 537	138, 093	47, 649	64, 770
Fourmies .....	206, 468	270, 498	227, 764	304, 325

Since the month of April combed wools have advanced 60 per cent. The extraordinary activity which prevails in knitted goods may cause a further advance.

In coarse carded yarns large orders have been taken, but the highest quotations are nominal, as spinners are willing to concede to large buyers.

In mixed yarn of carded wool the demand would not warrant an advance of price. In fancy yarns sales are moderate.

Favorable reports of active demand for fall and winter goods are made throughout the manufacturing district. The trade of Roubaix with the United States is increasing, while Elbeuf and Amiens barely hold their own.

Advices from Vienna report that the German trade is making rapid strides, and its sales, not only of ladies' dress goods are large, but also of cloth for men's wear, at good prices, and that they are producing a better article than formerly. In many instances advances of 40 per cent. have been made within six months.

The government of Victoria has recently raised its tariff 8 per cent. upon woollen merchandise imported—this in addition to the former tax of 45 per cent. Besides, the same government proposes a still further duty of 5 per cent. upon garments imported.

**Monthly report of the woollen trade.**—Consul Charles P. Williams, of Rouen, France, under date of October 21, 1886, writes as follows :

The monthly bulletin of the chamber of commerce of Elbeuf shows the delivery of 457,673 kilograms of cloth in September last, against 446,756 kilograms during the same month of the previous year.

The light stock and the high price of wool has kept up the price. Very little of this has been exported.

Mazamet (department of Tarn) has sent off during the month of September last 149,839 kilograms of cloth and 388,850 kilograms of other woollen goods. During the corresponding month last year the shipments were 129,484 kilograms of cloth and 257,267 kilograms of other woollen goods.

The chamber of commerce of Belley (department of Ain) report the market for wool, at home and abroad, has been active and satisfactory, and is permanently improved.

The firmness of the raw material gives activity to the sales of manufacturers, and better prices are obtained. Army cloth is in demand.

In cloth, pilot and English reversible are in demand. Colonial wools are specially adapted to this manufacture. Inferior English is firm.

In English yarn there is no change. The total advance upon the best quality of Botany is 50 per cent.

Reports from Berlin and Austria state that knit goods are in demand. Advices from Saxony are more favorable than from the provinces of the Rhine; in the latter districts large stocks are held. The manufactories of Cottres have made large sales in South America and Australia. Other manufactories, especially those of Grünberg (province of Prussian Silesia) and Sommerfeld (province of Braudenberg), export to India and China.

The great market of Buda-Pesth has been good. Winter goods have been in demand. Cloths, especially those of Berlin, and zephyr shawls have been eagerly taken up. Cloths have been active on a rising market. Knit goods and hosiery have been largely sold. The small stock alone has limited the sales. The exports of Pesth show that the cloth industry is not in an advanced state and inferior to the requirements of trade in many respects.

**Telegraph companies of the Netherlands.**—Minister Isaac Bell, jr., transmits the following statements to the Department:

*Length of line and wire and number of bureaux of state telegraph.*

Year.	Lines.	Wire.	Bureaus.	Year.	Lines.	Wire.	Bureaus.
	<i>Kilometers.</i>	<i>Kilometers.</i>			<i>Kilometers.</i>	<i>Kilometers.</i>	
1854.....	274.5	476.8	6	1877.....	8,469.8	12,686.1	163
1856.....	997	1,757	23	1878.....	8,519	12,882.6	168
1861.....	1,512	3,562	48	1879.....	8,648.6	13,358.6	175
1866.....	1,972	5,488	64	1880.....	8,761	13,654.7	185
1870.....				1881.....	8,821.3	13,817	191
1871.....	2,983	10,140	119	1882.....	8,943.1	14,378.2	203
1872.....	3,121.1	10,778.7	129	1883.....	4,183	15,486.5	225
1873.....	3,288.9	11,276	145	1884.....	4,255.9	15,714.8	251
1874.....	3,277.5	11,738.4	149	1885.....	4,541.5	16,509.8	288
1875.....	3,431.1	12,365.4	158	1886.....	4,700.7	16,780.3	308
1876.....	3,440.4	12,332.5	159				

*Thousands of telegrams received and sent by the principal bureaux of state telegraph.*

Bureaus.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Amsterdam.....	897	921	932	1,018	1,170	1,257	1,277	1,315	1,232	1,289
Rotterdam.....	537	550	577	631	688	664	721	729	731	743
The Hague.....	176	188	190	198	211	232	245	256	256	244
Utrecht.....	94	96	80	103	102	121	121	124	119	113
Arnhem.....	81	83	76	96	96	96	84	104	100	100
Groningen.....	95	103	102	110	118	121	124	123	134	127
Leonwarden.....	68	71	69	75	80	82	80	76	73	77
Hertogenbosch.....	54	53	51	57	68	65	67	69	64	57
Dordrecht.....	80	82	79	84	91	99	89	90	90	87
Zwello.....	48	48	52	56	64	64	65	64	61	61
Leiden.....	57	60	57	63	67	68	68	66	66	67
Nieuwe-Diep.....	67	59	55	54	57	58	61	61	63	57
Maastricht.....	33	33	32	34	40	41	44	43	42	42
Nijmegen.....	45	44	48	52	57	60	63	63	61	64
Haarlem.....	42	44	45	49	56	58	61	65	65	66
Schiedam.....	50	49	47	50	53	57	54	54	52	50
Vlissingen (Flushing).....	41	42	37	41	39	36	36	40	40	39
Harlingen.....	42	41	37	40	45	44	40	45	41	41
Delft.....	31	33	34	38	41	42	41	41	43	42
Breda.....	28	31	34	36	40	42	44	48	46	42
Deventer.....	37	35	37	37	40	40	39	41	40	42
Middleburg.....	32	31	30	33	33	32	33	33	33	32
Vlaardingen.....	29	27	25	30	33	29	32	36	37	38
Venlo.....	17	17	16	17	20	19	20	21	20	21
Scheneningen.....	23	23	23	27	30	30	33	34	37	40
Ymuiden.....	1	16	16	18	19	19	21	28	26	27
Gorinchem.....	27	25	24	25	28	28	25	24	25	25
Tiel.....	21	21	21	21	24	23	22	20	20	19
Zutphen.....	23	23	24	26	28	28	29	31	32	33
Gouda.....	24	23	22	24	26	26	25	26	26	24
Rooendaal.....	14	11	11	13	15	14	14	17	16	18
Oss.....	16	12	14	18	26	22	23	23	23	21
Massaluis.....	27	24	23	25	25	25	26	31	25	13
Sneek.....	21	23	22	24	25	29	29	28	27	28
Kampen.....	21	20	22	23	24	24	23	24	23	22
Alkmaar.....	22	23	22	22	25	26	25	25	25	25
Hoorn.....	18	19	19	21	23	23	21	23	23	21
Tilburg.....	15	15	17	17	21	22	21	22	23	23
Roermonde.....	21	20	16	18	21	19	21	21	20	20
Goes.....	13	13	14	17	18	20	17	18	19	21
Almelo.....	16	17	17	18	20	21	20	20	21	21
Eindhoven.....	13	13	13	14	16	16	17	18	17	17
Zaandam.....	18	16	16	17	19	19	19	21	20	20

*Dispatches, receipts, cost of construction, and administration of state telegraph.*

Year.	Number paying dis- patches.	Receipts.	Receipts per dis- patch.	Cost of construc- tion.	Cost of adminis- tration and main- tenance.	Cost of adminis- tration and main- tenance per dispatch.
		<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>
1882	1,301	2,396	1.135	146,584	17,180	0.866
1883	45,674	51,882	.....	213,301	80,652	0.725
1884	101,864	105,549	1.035	.....	76,632	0.743
1885	104,011	137,382	1.124	170,308	103,910	0.683
1886	190,447	215,523	.....	200,845	180,068	0.776
1887	224,803	254,911	1.131	206,051	173,472	0.782
1888	263,777	280,840	1.134	215,824	206,299	0.633
1889	388,473	291,538	0.875	305,351	254,840	0.705
1890	418,445	303,091	0.750	339,157	291,599	0.657
1891	479,338	334,862	0.733	379,544	319,896	0.673
1892	526,496	320,864	0.609	419,022	354,507	0.578
1893	653,261	477,423	0.610	456,541	376,241	0.502
1894	801,896	442,602	0.731	467,644	402,476	0.471
1895	966,429	518,274	0.552	531,903	451,749	0.451
1896	1,087,900	510,968	0.536	719,653	490,817	0.486
1897	1,113,637	510,642	0.470	772,855	541,212	0.462
1898	1,496,554	530,027	0.419	805,396	602,016	0.464
1899	1,632,052	573,860	0.360	954,231	757,767	0.450
1870	1,837,702	621,100	0.338	963,320	827,670	0.430
1871	2,038,247	673,361	0.330	946,467	878,266	0.490
1872	2,018,673	671,570	0.332	1,020,474	927,943	0.480
1873	2,064,238	712,353	0.345	1,104,133	989,569	0.511
1874	2,085,460	716,204	0.338	1,152,258	1,065,396	0.513
1875	2,106,959	744,027	0.339	1,208,941	1,126,414	0.482
1876	2,357,583	788,758	0.335	1,221,444	1,160,968	0.508
1877	2,365,306	791,005	0.332	1,287,781	1,210,063	0.516
1878	2,595,442	826,340	0.345	1,316,289	1,236,334	0.478
1879	2,685,233	922,863	0.344	1,403,970	1,231,802	0.446
1880	3,082,717	1,023,620	0.333	1,467,912	1,376,716	0.431
1881	3,251,653	1,083,190	0.331	1,482,391	1,401,058	0.443
1882	3,333,271	1,071,845	0.318	1,582,115	1,477,570	0.462
1883	3,847,093	1,061,470	0.314	1,615,282	1,548,468	0.483
1884	3,820,669	1,041,510	0.307	1,739,544	1,655,215	0.480
1885	3,444,698	1,037,923	.....	.....	.....	.....

*Thousands of dispatches transmitted by private telegraph.*

Companies.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
Dutch Railway Company.	31.4	43.7	57.7	49.6	48.8	52.9	64.9	66.5	67.2	71.6	68.8	70.0
Rotterdam Telegraph Company.	48.6	71.2	71.0	66.5	58.8	62.9	70.3	67.0	68.0	64.1	59.0	.....
Great Central Belgian Railway Company.	8.0	12.1	13.2	12.4	10.5	8.8	6.5	5.2	3.8	3.6	3.5	3.9
Netherlands-Rhine Railway Company.	20.4	30.0	30.7	33.2	33.1	37.9	39.6	41.4	41.8	42.3	39.2	37.0
State Railway Exploration Company.	2.9	4.6	4.7	5.8	5.9	5.1	5.0	4.7	4.3	4.4	4.1	3.9
Gens and Terneuzen Railway Company.	62.8	78.3	84.2	89.9	88.5	94.4	101.4	109.8	117.2	126.0	126.3	129.3
North Brabant Dutch Railway Company.	.....	.....	1.9	2.0	1.8	1.7	1.6	1.9	3.1	3.3	3.3	2.2
Mechelen and Tern Railway Company.	3.9	5.3	6.3	6.6	5.7	6.3	6.9	6.7	6.5	5.9	5.5	5.7
Blokzigl and Valluh Telegraph Company.	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.9	0.8	0.9	1.0	1.1
Blokzigl and Kuinse Telegraph Company.	.....	.....	.....	.....	2.2	2.3	2.3	2.1	2.1	2.1	2.3	2.2
Rhine Railway Company.	.....	.....	.....	.....	.....	1.1	1.4	1.4	1.2	1.2	1.3	1.1
St. Maartens and St. Annaland Company.	.....	.....	.....	.....	.....	.....	0.3	0.3	0.4	0.8	0.3	0.4
Haarlem and Zandvoort Company.	.....	.....	.....	.....	.....	.....	.....	2.1	1.8	1.9	2.2	2.0
Weesp-Muiden Telegraph Company.	.....	.....	.....	.....	.....	.....	.....	2.5	4.6	5.4	5.3	4.7
Middleburg and Domburg Telegraph Company.	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.3	3.4	2.5
Vianen and Vreeswyk Telegraph Company.	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.2	1.9	1.7
Office of Hoogheemraadsch & Rigul.	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.4	0.6	0.9	0.7	0.7
Office of Elst.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.1	1.6
Office of Drunen.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.3	0.6
Office of Haarsteg.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.5	0.7
Office of Eindhoven.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.0
Office of Wijk.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.8
Office of Uithoorn.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.7
Office of Kolingsplaat.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.5
Office of Amsterdam Canal Company.	.....	.....	.....	2.3	2.9	11.8	8.8	8.6	7.5	.....	.....	.....
Office of Belgian Railway.	1.1	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*General review of the telegraphic correspondence of all the state and private offices.*

(Number of dispatches in thousands.)

Year.	Interior.	Foreign.								Total dis- patches received and sent.
		Sent to—				Received from—				
		Belgium.	Germany.	Great Britain.	All other coun- tries.	Belgium.	Germany.	Great Britain.	All other coun- tries.	
1875	1,459.3	109.8	146.1	72.4	328.3	108.4	159.6	93.7	355.6	2,214.7
1876	1,623.2	108.1	143.6	76.4	334.8	111.4	153.8	101.6	368.2	2,377.0
1877	1,649.8	108.8	143.1	78.3	342.5	109.2	159.2	96.8	367.9	2,405.2
1878	1,664.8	107.9	145.9	70.5	334.5	112.7	162.7	88.6	369.0	2,413.3
1879	1,787.6	127.5	178.6	70.9	388.3	125.9	204.0	89.7	427.3	2,704.8
1880	1,941.9	152.3	192.7	114.3	460.1	155.6	207.8	154.0	518.2	3,109.2
1881	2,002.3	168.9	199.3	113.5	486.7	169.8	215.7	165.5	571.0	3,251.3
1882	2,040.6	187.8	217.5	107.5	512.9	208.7	223.9	162.6	690.2	3,364.6
1883	2,105.3	227.2	240.1	72.1	539.4	255.3	247.3	113.3	616.4	3,379.7
1884	2,052.9	194.2	236.4	87.5	518.1	226.1	245.5	139.0	612.6	3,152.9
1885	2,023.3	185.0	223.4	109.6	523.0	210.3	236.1	188.2	696.6	3,182.9



**Trade, &c., of Port Stanley and St. Thomas, Ontario.**—Consul Allen Francis, under date of October 9, 1886, writes as follows:

There have been no material changes noticeable in commercial matters in this consular district during the quarter. The usual productions of the country shipped to the United States, though in some articles have fallen off, in the aggregate amount to nearly the same value as the corresponding quarter of 1885.

The seasons have proven favorable for crops, their yield and quality an average with other years, and harvested without injury by wet weather or frosts. Staple products, particularly wheat, are ruling low in price, it being sold at 72 and 75 cents per bushel.

The emigrants from this district during the quarter, their personal effects passing through the consulate, numbered one hundred and thirty-six, of both sexes and of all ages, representing thirty-eight heads of families, their destination generally being Dakota.

The quarter has witnessed no revival of business in this section of Ontario. In St. Thomas there have been but few buildings erected during the season; suspended factories have not resumed; numbers of stores and dwelling-houses eligibly located are for rent, and it is estimated five hundred people, mostly mechanics and laborers, have left the city since the opening of spring.

**Export of intoxicating liquors to the Congo.**—Consul Eckstein, of Amsterdam, under date of September 15, 1886, writes as follows:

According to written statements before me, and procured from the department of finances at the Hague and from the collector of customs at Amsterdam, the exports of intoxicating liquors from the Netherlands to Africa in 1883, 1884, and 1885 were, as shown in the following statements, viz:

Whither exported.	1883.	1884.	1885.
<i>Liters.</i>	<i>Liters.</i>	<i>Liters.</i>	<i>Liters.</i>
<b>Africa:</b>			
East coast .....	217,389	7,479	20,841
West coast .....	3,214,312	4,636,040	4,119,553
<b>Algiers .....</b>		1,377	680
<b>Egypt .....</b>		14,595	19,592
<b>Total .....</b>	<b>3,431,651</b>	<b>4,659,491</b>	<b>4,160,675</b>

The department of finances informs me that separate statistics or figures of the exports to the Congo cannot be given; they are included in the quantity of the exports to the west coast of Africa.

Regarding the names of the exporters, I am enabled to state only the following:

At Amsterdam there are no firms, commercial associations, or corporations engaged either in exporting spirituous liquors or in business of any kind exporting or importing to the Congo or other ports in Africa. There are, however, several such at Rotterdam, and their names are, Nieuwe Afrikaansche Handelsvennootschap (the New African Commercial Association), Hendrik Mueller & Co., and Handels Compagnie "Mozambique."

All intoxicating liquors which are exported from this country or are exported from anywhere on "Dutch account," and which are destined for and reach the Congo or other ports and places in Africa, are exported, I am assured it is safe to assume, by the above-named commercial institutions.

The company at Rotterdam is disinclined to communicate any information relating to his exports of spirituous liquors to the Congo or elsewhere in Africa, or any other information on the subject, and application for such information is being continually made to him by different parties.

All exporters clear their goods, spirits and other, for the "west coast of Africa," a vague destination, which is probably done to hide their real destination—the Congo, in most cases.

It is said that on the Congo the Germans and Belgians spoil the business by selling at wretchedly low prices after having imported on a ridiculously large scale for too small a consuming community.

Eatables the natives do not want there from Europe; clothing, hardly; fineries, to only a small extent; but gin and rum, that they do want sorely, and it is provided them often in the most miserable form of adulterated stuff.

The English and French houses manufacture rum, it is said, from malt wine, using certain essences for the purpose, and dispose of it in that section.

**Fruit culture in Guadeloupe.**—Consul Charles Bartlett, of Guadeloupe, under date of September 8, 1886, writes as follows :

In this colony are found all the fruits of the tropical climates, but none of them except the pineapple are exported. The bananas and oranges are abundant, but entirely consumed locally. Their culture could easily be greatly extended so as to be in a short future an important branch of business. Some years ago several small shipments of oranges were directed to the United States and Newfoundland without much success, owing to the careless manner with which that fruit was picked from the trees. Instead of being gathered by the hands, as it is usually done in the Mediterranean and in Louisiana, here the blacks use a pole to knock them off the trees, and being bruised by the fall, soon rot and are lost.

The cocoanuts are very plentiful, but not exported. All the fruits are used locally in their green state, for their water to drink in the morning. This culture could also be greatly extended, requiring no pains or trouble, when once inserted in the ground are left to themselves to grow. They generally bear fruit when five or six years old.

Pineapples are put up in cans of 1 kilogram each, cans and fruit weighing 1,250 grams, having just one pineapple of 1 kilogram in each can. From 480,000 to 500,000 kilograms or cans are put up annually, beside what are used locally in the natural state.

The product is rather on the increase, and if the prices would warrant the production, preparations are made by the planters to greatly extend their culture, and could be increased to an unlimited extent.

The price in France, where all the product was shipped in 1884, was 1.05 to 1.10 francs per can of 1 kilogram. In 1885 it was from 90 to 95 centimes per can of 1 kilogram. This year, 1886, the price offered is only 75 centimes, which has been refused by all the planters' agents. The season for shipping is from the 1st of April to the 1st of August.

The fruits are of a very fine quality and size. I have seen some of very large size; but these are not preserved in cans, as they are not wanted in France.

In 1884 there were exported 309,851 cans of 1 kilogram each. In 1885 there were exported 347,173 cans of 1 kilogram each. This year, 1886, there will be considerably more exported. The cost of the cans, already made in France, is 18.50 francs per 100 cans; the case holding 36 cans costs 1.25 francs. The freight from France to this port costs 22 to 25 francs per ton of 18 cases of 36 cans, making each empty can ready to put the pineapple in cost about 22 to 23 centimes.

The facilities for shipping to the United States by sailing vessels are as good as for shipping to France.

The freight to France is from 30 to 40 francs per ton, by sail or steam. The freight to the United States is, on an average, about \$4 per ton.

I am sorry that this circular reached me so late. This is owing to the length of time those letters from Washington are kept in New York, where they neglect to put them on board of the first vessel bound to this port. I am fearful that some circulars never reached me, by being sent on this way.

**Wheat crop of Russia.**—Consul Thomas E. Heenan, of Odessa, writes under date of September 27, 1886, as follows :

The wheat crop of Russia for 1886, according to the best information received, will prove to be a very short one. The reports from the different agricultural centers state that the wheat is not only short in yield but poor in quality. Many canes have operated to bring about this result—poor cultivation and little care in the selection of the seed. The lack of snow in many districts last winter not only injured the winter wheat but the spring wheat also, owing to the want of moisture in the soil. The early part of the season was quite dry, and the wheat failed to sprout below the surface. It is perfectly safe to say that the wheat surplus of 1886 will be very small as compared with that of 1885.

**Report on the currant crop of Greece of 1886.**—Under date of October 7, Consul Hancock writes from Patras :

Early in the summer the prospects were for a very large currant crop. The show on the vines was extraordinary, but damp weather during the month of July caused a deal of the fruit to split, thereby causing rot, which made a very considerable reduction on the previous estimate.

Excepting a little rain that fell in the islands of Cephalonia and Santa Maura, and a small portion of the most western part of the Morea, causing a little damage, the crop was got in under favorable circumstances, and the quality on the whole is satisfactory, and, notwithstanding the loss from rot, is a fairly large one, being estimated at 125,000 tons.

As the markets of consumption were all more or less bare of stock, prices opened somewhat high for first shipments, being for finest 23s. per cwt., free on board; fine, 20s. 6d. per cwt., free on board; good, 18s. per cwt., free on board.

At these prices heavy shipments were made to England, but that market did not respond and operators lost considerably. Prices consequently became easier on this side, but growers showed considerable firmness, and prices did not decline below, finest, 22s. per cwt., free on board; fine, 18s. 6d. per cwt., free on board; good, 15s. per cwt., free on board. Reaction has, however, again set in, caused by speculation, under the impression that, owing to the larger quantity of currants required by France for the purpose of making wine, the crop will not suffice for the requirements. Prices have now advanced to, for finest, 24s. per cwt., free on board; fine, 20s. per cwt., free on board; good, 18s. per cwt., free on board.

Shipments to date, as compared to last year, are :

To—	1886.	1885.
	<i>Tons.</i>	<i>Tons.</i>
United Kingdom.....	32,344	33,900
United States.....	2,919	3,442
Canada.....	1,488	783
France.....	4,840	3,722
North of Europe.....	5,112	3,942
Trieste.....	858	627
Australia.....	595	628
Russia.....	7	65
Total.....	48,163	47,109

French buyers last year having been able to operate largely in the beginning of the season at 33 to 35 francs per 100 kilograms, cost, freight, and insurance, are very loath to pay more this year; consequently their purchases so far have been limited; what fruit has been shipped has been bought at 36 to 43 francs per 100 kilograms, cost, freight, and insurance. Local holders feel confident, however, that they must soon come forward at considerably higher prices.

Freights are ruling low—say for United States, 17s. 6d. to 20s. per ton, in full; for London and Liverpool, 12s. 6d. to 15s. and 10 per cent.; for Hamburg, 20s. and 10 per cent.; for Marseilles, 16 to 18 francs per 1,000 kilograms, in full; and for Bordeaux and Rouen, 25 francs, in full.

**Coasting trade of Peru.**—Under date of September 9, Consul Brent writes from Callao:

By a supreme decree of this Government it is declared that after the 1st of December next the coasting trade of Peru must be carried on by vessels under the Peruvian flag. This prohibition does not, however, extend to the steamers of the Pacific Steam Navigation Company, nor to those of the other lines plying along the coast. Its application is to sailing vessels only. There are no vessels under the American flag engaged in this trade.

**Corn crop of Italy.**—Consul-General Alden writes under date October 11, 1886:

The new crop of Indian corn throughout the Italian Kingdom is 28,288,000 hectoliters, equivalent to 80,281,344 bushels, being about 91 per cent. in quantity of the average crop. Three-fourths of the crop is of good quality.

**Spanish grape crop.**—Consul Darius H. Ingraham writes from Cadiz, October 2, 1886:

I am informed by Messrs. Lacave & Co., of Cadiz, that the yield of grapes in this province for 1886 will be about the same in quantity but better in quality than the good one of last year. The crop will be gathered in about a fortnight, unless sooner matured by rain. The prices will be a trifle higher than last year's, but wines will remain about the same in price, on account of the abundant crops in France, Italy, and Algiers, thereby creating less demand for exportation of Spanish wines.

**Mining Exposition at Lima.**—Consul Brent informs the Department that the opening of the Mining Exposition at Lima, fixed for the 1st of June, 1887, has by supreme decree been postponed to the 1st of the following October.

**Exports from Hawaiian Islands.**—The following statements have been transmitted:

The amount of sugar exported for the period of nine months of the present year is unprecedented in the history of this country, and a comparison with the same period of 1885 shows the large increase of 26,000 tons. The total export of this commodity for the twelve months, 1885, amounted to 85,000 tons, while for the past nine months of the present year it reached 101,000 tons, exceeding the former amount by 16,000 tons.

In all of the other articles of export, save in a few cases, a better showing is indicated than formerly.

*Quantities and values of the principal domestic exports, by customs districts, for the three months ending September 30, 1886.*

Articles.	Honolulu.		Kahului.	
	Quantity.	Value.	Quantity.	Value.
Sugar..... pounds.....	36,903,388	\$1,622,175 17	4,040,020	\$188,689 80
Rice..... do.....	2,223,664	98,874 92		
Hides..... pieces.....	7,999	28,046 88	788	3,449 06
Bananas..... bunches.....	12,660	12,240 00		
Goat-skins..... pieces.....	6,829	3,885 40		
Molasses..... gallons.....	27,591	4,002 46		
Sheep-skins..... pieces.....	2,225	258 50		
Coffee..... pounds.....	605	104 50		
Betel leaves..... boxes.....	59	345 00		
Sundries.....		4,79 00		
Total value.....		1,774,661 83		192,148 88

Articles.	Hilo.		Total at all ports.	
	Quantity.	Value.	Quantity.	Value.
Sugar..... pounds.....	887,650	\$36,976 89	41,881,053	\$1,847,851 36
Rice..... do.....			2,223,665	98,874 92
Hides..... pieces.....	153	428 92	8,935	31,924 88
Bananas..... bunches.....			12,660	12,240 00
Goat-skins..... pieces.....			6,829	3,885 40
Molasses..... gallons.....			27,591	4,002 46
Sheep-skins..... pieces.....			2,225	258 50
Coffee..... pounds.....			605	104 50
Betel leaves..... boxes.....			59	345 00
Sundries.....		80 10		4,809 10
Total value.....		87,485 41		2,004,298 12

*Quantities and values of the principal domestic exports for the nine months ending September 30, 1886 and 1885, respectively, showing increase and decrease.*

Articles.	Nine months ending September 30, 1886.		Nine months ending September 30, 1885.		Quantities.	
	Quantity.	Value.	Quantity.	Value.	Increase.	Decrease.
Sugar..... pounds.....	202,468,051	\$9,208,875 86	149,644,276	\$7,243,325 23	52,823,775	
Rice..... do.....	5,401,715	249,828 43	5,383,353	283,365 54	18,363	
Hides..... pieces.....	22,232	81,269 31	15,386	60,224 15	6,892	
Bananas..... bunches.....	35,102	38,417 25	43,673	43,577 50		8,571
Goat-skins..... pieces.....	14,488	8,911 85	16,445	10,700 58		1,962
Molasses..... gallons.....	63,071	7,991 16	46,362	5,437 75	16,689	
Sheep-skins..... pieces.....	7,360	799 00	7,563	1,6 0 62		203
Coffee..... pounds.....	4,631	847 00	1,375	241 50	3,256	
Betel leaves..... boxes.....	223	1,122 50	281	1,575 00		58
Tallow..... pounds.....	15,885	793 00			15,885	
Wool..... do.....	73,180	7,000 00	71,639	6,584 97	1,541	
Awa..... do.....	865	73 70			865	
Dried bananas..... boxes.....			892	4,285 00		892
Calf-skins..... pieces.....			26	20 00		26
Sundries.....		8,663 95		4,178 86		
Total value.....		9,609,593 01		7,663,116 70	1,944,476 31	

**Coal at Hamilton, Ontario.**—Consul Albert Roberts writes from Hamilton, November 10, 1886:

Coal is the chief article of import from the United States at this port, all the coal consumed within this consular district being supplied from United States collieries. During the year ending September 30, 1886, 131,066 tons of coal were imported, duty 50 cents a ton, exclusive of 983 tons of coal screenings and dust, upon which a duty of 20 per cent. is levied. The details were:

Description.	Tons.	Duty.
Anthracite .....	66,797	\$32,386 50
Bituminous .....	62,634	37,580 40
Coke .....	1,635	817 50
<b>Total</b> .....	<b>131,066</b>	<b>71,786 40</b>

The average price charged consumers is \$6 per ton.

**The harvest of Belgium.**—Under date of October 27, Consul Slade sends the following from Brussels:

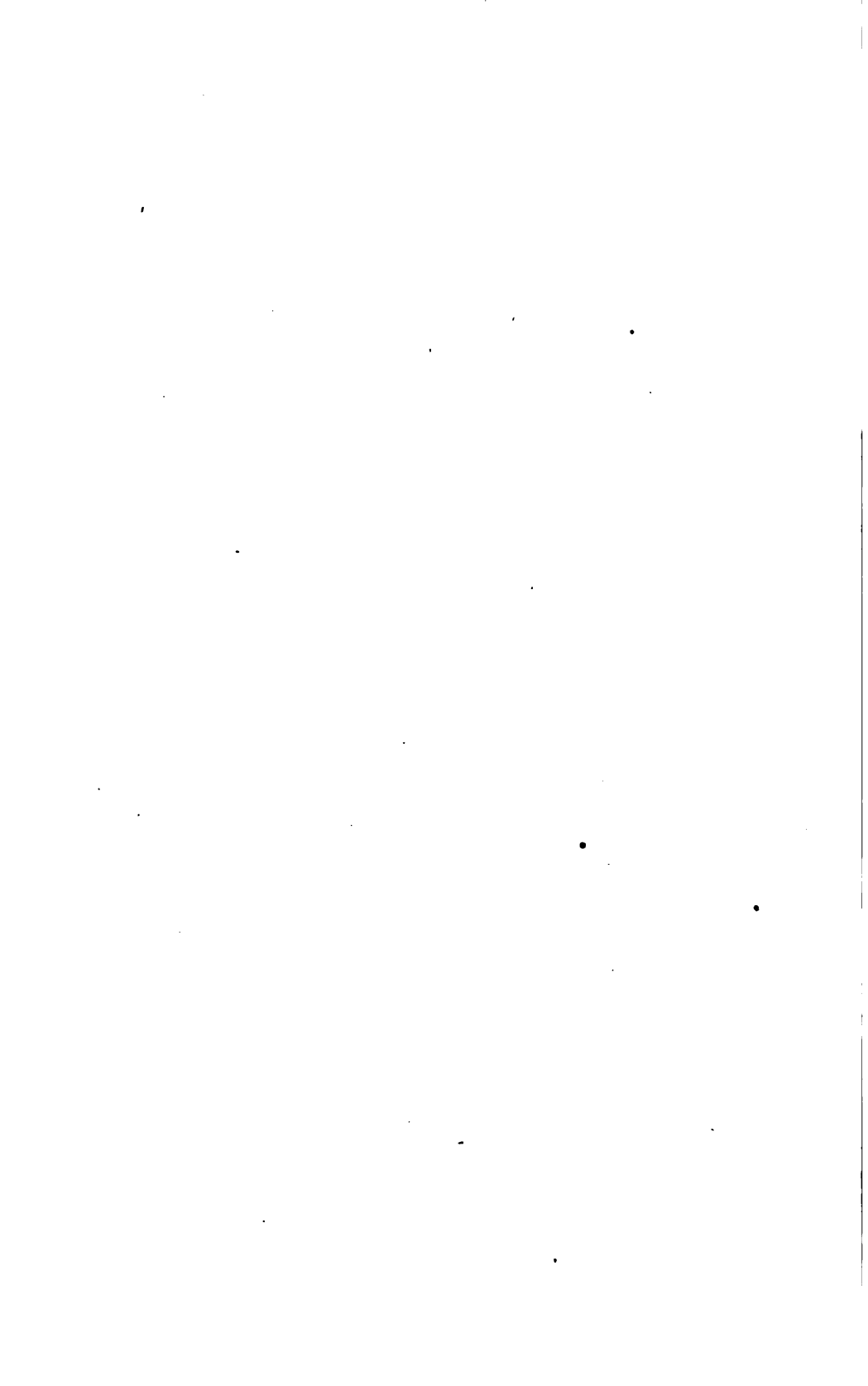
*Table showing the approximate yield of the harvest of 1886 in Belgium.*

[1 hectare = 2.47 acres; 1 hectoliter = 2.83 bushels; 1 kilogram = 2.20 pounds.]

Provinces.	Quality.	Yield per hectare.	Provinces.	Quality.	Yield per hectare.
<b>WHEAT.</b>		<i>Hectoliters.</i>	<b>BARLEY—continued.</b>		<i>Hectoliters.</i>
Antwerp .....	Good .....	27	Hainaut .....	Rather good .....	39
Brabant .....	do .....	21	Liège .....	Good .....	26
Flanders:			Limbourg .....	do .....	30
West .....	do .....	26	Luxembourg .....	do .....	22
East .....	do .....	25	Namur .....	do .....	33
Hainaut .....	Rather good .....	24	<b>Average, Kingdom</b> .....	<b>Good</b> .....	<b>31</b>
Liège .....	Good .....	24	<b>SARRASIN.</b>		
Limbourg .....	do .....	24	Antwerp .....	Good .....	28
Luxembourg .....	do .....	20	Flanders:		
Namur .....	do .....	25	West .....	do .....	17
<b>Average, Kingdom</b> .....	<b>Good</b> .....	<b>24</b>	East .....	do .....	20
<b>BUCKWHEAT.</b>			Limbourg .....	do .....	17
Flanders, West .....	Rather good .....	31	<b>Average, Kingdom</b> .....	<b>Good</b> .....	<b>20</b>
Hainaut .....	Middling .....	40	<b>OATS.</b>		
Liège .....	Good .....	36	Antwerp .....	Very good .....	49
Limbourg .....	do .....	35	Brabant .....	do .....	43
Luxembourg .....	do .....	20	Flanders:		
Namur .....	do .....	38	West .....	do .....	45
<b>Average, Kingdom</b> .....	<b>Good</b> .....	<b>33</b>	East .....	do .....	43
<b>RYE.</b>			Hainaut .....	Good .....	47
Antwerp .....	Middling .....	19	Liège .....	do .....	40
Brabant .....	Nearly bad .....	17	Limbourg .....	Very good .....	39
Flanders:			Luxembourg .....	do .....	32
West .....	Middling .....	22	Namur .....	Good .....	41
East .....	do .....	23	<b>Average, Kingdom</b> .....	<b>Very good</b> .....	<b>42</b>
Hainaut .....	do .....	19	<b>HORSE-BEANS.</b>		
Liège .....	do .....	17	Antwerp .....	Good .....	25
Limbourg .....	do .....	17	Brabant .....	do .....	24
Luxembourg .....	Good .....	16	Flanders:		
Namur .....	Bad .....	18	West .....	Very good .....	26
<b>Average, Kingdom</b> .....	<b>Middling</b> .....	<b>18</b>	East .....	Good .....	27
<b>BARLEY.</b>			Hainaut .....	do .....	25
Antwerp .....	Good .....	31	Liège .....	do .....	19
Brabant .....	Rather good .....	33	Luxembourg .....	Very good .....	19
Flanders:			Namur .....	Rather good .....	19
West .....	Good .....	32	<b>Average, Kingdom</b> .....	<b>Good</b> .....	<b>23</b>
East .....	do .....	36			

Table showing the approximate yield of the harvest of 1886 in Belgium—Continued.

Provinces.	Quality.	Yield per hectare.	Provinces.	Quality.	Yield per hectare.
<b>PEAS.</b>			<b>GRASS.</b>		
Antwerp .....	Good .....	<i>Hectoliters.</i> 24	Antwerp .....	Good .....	<i>Kilograms.</i> 3,689
Brabant .....	do .....	23	Brabant .....	do .....	3,115
Flanders:			Flanders:		
West .....	do .....	24	West .....	do .....	4,970
East .....	do .....	22	East .....	do .....	4,980
Hainaut .....	do .....	21	Hainaut .....	do .....	4,044
Limbourg .....	do .....	20	Liège .....	Middling ..	3,400
Luxembourg .....	do .....	18	Limbourg .....	Good .....	3,458
			Luxembourg .....	do .....	3,923
Average, Kingdom ..	Good .....	21	Namur .....	do .....	3,533
<b>POTATOES.</b>			Average, Kingdom ..	Good .....	3,901
Antwerp .....	Good .....	<i>Kilograms.</i> 14,966	<b>CLOVER.</b>		
Brabant .....	do .....	15,076	Antwerp .....	Good .....	26,214
Flanders:			Brabant .....	do .....	24,461
West .....	do .....	12,700	Flanders:		
East .....	do .....	17,200	West .....	do .....	32,850
Hainaut .....	do .....	14,650	East .....	Very good ..	35,800
Liège .....	Very good ..	13,000	Hainaut .....	do .....	21,716
Limbourg .....	Good .....	14,317	Liège .....	Good .....	
Luxembourg .....	do .....	13,000	Limbourg .....	do .....	17,763
Namur .....	do .....	12,285	Luxembourg .....	do .....	20,571
Average, Kingdom ..	Good .....	14,132	Namur .....	do .....	16,687
<b>COLZA.</b>			Average, Kingdom ..	Good .....	24,445
Brabant .....	Bad .....	<i>Hectoliters.</i> 18	<b>BEETS FOR ANIMALS.</b>		
Flanders:			Antwerp .....	Good .....	
West .....	Good .....	25	Brabant .....	do .....	42,125
East .....	Bad .....	15	Flanders, East ..	do .....	38,600
Hainaut .....	Rather good ..	21	Hainaut .....	do .....	44,600
Limbourg .....	Bad .....	23	Liège .....	do .....	33,000
Luxembourg .....	Good .....	19	Limbourg .....	do .....	21,750
Average, Kingdom ..	Middling ..	20	Namur .....	do .....	40,830
<b>HEMP.</b>			Average, Kingdom ..	Good .....	36,817
Antwerp .....	Good .....	<i>Kilograms.</i> 700	<b>SUGAR-BEETS.</b>		
Brabant .....	Rather good ..	496	Brabant .....	Good .....	36,571
Flanders:			Flanders, East ..	Rather good ..	32,000
West .....	Good .....	537	Hainaut .....	Good .....	36,530
East .....	Rather good ..	665	Liège .....	do .....	28,000
Hainaut .....	do .....	483	Namur .....	Rather good ..	28,330
Limbourg .....	Good .....		Average, Kingdom ..	Good .....	32,000
Luxembourg .....	do .....	450			
Namur .....	do .....	782			
Average, Kingdom ..	Good .....	500			



UNITED STATES CONSULAR REPORTS.

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REPORTS

FROM THE

CONSULS OF THE UNITED STATES

ON THE

COMMERCE, MANUFACTURES, ETC.,

OF THEIR

CONSULAR DISTRICTS.

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CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 72.—DECEMBER, 1886.

**LABOR COST IN EUROPE AND AMERICA, AND INDUSTRIAL EDUCATION.**

*REPORT OF CONSUL SCHOENHOF, OF TUNSTALL.*

I have used much time in visiting factories and getting accounts from manufacturers of the labor cost in various items and products, for comparison with foreign cost. I visited schools and colleges where technical instruction is given, and am able now to give a more concise and positive statement as to the relative positions of the United States and European competing countries from a trade point of view.

In the two reports published in No. 70 of Consular Reports, treating of the cost of cotton and silk spinning, the labor cost is given as somewhat less than in England, with earnings at from 50 to 100 per cent. more in America. I can supplement this statement in reference to silk by the fact that while in a certain Macclesfield mill 144 hands are employed in the process of throwing 500 pounds of Canton silk, with average earnings of about \$2.25 a week, an American mill, whose accounts I was permitted to look into, employed 80 hands only in the throwing of 1,050 to 1,200 pounds of Canton silk. Half of this product was turned into sewing silk, and this half had to be subjected to another process of work, and had to be dyed, as against the Macclesfield amount of throwing alone.

Consequently, with the number of hands and double the product of Macclesfield, there was a fourfold product for the American operative. American average earnings of \$5.50 per week give, therefore, cheaper results than English earnings of \$2.25.

This I had not been able to incorporate in my report, being of subsequent collection. So, likewise, in cotton I have rather understated, than overstated. In the shoe industry I have data of a still more impressive nature now in my possession.

From a shoe factory near Frankfort-on-the-Main, I have the detailed price paid for the making of the uppers for ladies' high top button gaiters as being 21 cents per pair. From Lynn factories I have gathered

the facts bearing on the cost of the same labor as 11 cents a pair, or nearly 50 per cent. less than in Germany. The whole boot, solid and finished and laid in boxes, costs 33 cents in Lynn, which is far below what it is in Germany. The actual earnings in Germany, taken by myself from the work accounts, are on the average per hand employed \$3.38, while in Lynn they are not less than \$9 per week. The methods of working, however, as applied in the two countries, at once explain to the observer the true reasons for this seeming disparity. The whole problem can, however, be made clear only by statistical comparisons covering different countries. A knowledge of the conditions of work, methods and of prices of labor, and of commodities, in fact of the general world of commerce, is necessarily one of the essentials in the collecting of these data. Frequently one is wilfully misled by manufacturers, and obtains statistics which must carry discomfiture if accepted and made use of by those whom they are intended to benefit. A German manufacturer of sewing-machines gave me the cost of labor, covering the whole machine, including the wood-work, as about 6 marks. Another manufacturer, somewhat nearer home, of course, stated it higher than the machine could be bought for at wholesale. Both intended to mislead, but they had different objects in view.

The result of my observations, always bearing in mind the limitation of time and space by which they were controlled, may be summed up as follows:

(1) There can be no doubt as to the superiority of our labor, greater efficiency, and productiveness, even where not aided by machinery.

(2) Nor can there be much doubt that our manufacturers are quicker to adopt and change machinery, whenever the expected results promise adequate returns.

(3) Our work-people take more quickly to machinery, and do not make the factious and obstinate opposition with which new inventions meet up to the present, even in England.

(4) The domestic industries of Europe have no footing in the United States, while on the Continent a great part of work is still subjected to methods which cannot be uprooted easily, being outgrowths of a national disposition, the development of plodding, toiling generations, while here everything is more of the nature of creations superimposed upon new uncultivated soil, as it were. We enjoy all the advantages and have naturally to suffer from the disadvantages of these conditions.

Europe, with the advantage of an abundance of skilled hand-workers, of a heredity of adaptation for neatness and detail, has the additional aid of Government and private enterprise in art schools, art museums, sample rooms, and museums of collections of all imaginable representations of the productions of various countries and ages.

#### INDUSTRIAL AND TRADE SCHOOLS.

Technical schools abound and are in course of erection wherever a necessity for them is manifest. I have in no other domain of mental activity relating to trade and manufacture seen so much endeavor to keep abreast of each other as in this educational subject.

Not having within our own population the skill and training which is the result of generations of application, it would seem natural that we endeavor to supply the educational means which would compensate for the deficiency.

The pressure of a higher ambition in this direction might be presupposed. But instead of this we notice an entire absence of even an

earnest effort in this direction. The industrial problem must be considered in its different aspects. The mere question of dollars and cents contained in a pound of manufactured cotton, silk, wool, or iron, is only half, and the minor half, of the question. The more important half at the present time is the æsthetic part, and herein our deficiency is most glaring. This is apparent in color and design, the finishing even of dry goods, silks, cotton, and wool fabrics of domestic manufacture. It would not cost more to do it well, if we knew how. Any advance made in this by proper direction and training would alone compensate in its fruits for any outlay or sacrifice. Much could be done by proper teaching.

Not only is proper care taken abroad to educate the young in trades and manufactures, but the commercial courses obtain much greater attention there than might be supposed. Especially in Germany do commercial schools flourish. May not the systematic, thorough training of the German and other European merchants be one of the causes which has put the foreign trade of America in the hands of foreigners, principally Germans? Other causes may contribute, but the knowledge of the languages, the trading methods, and the economies of different countries certainly is not the least of them.

The different means adopted by the working classes of Europe, principally in England, during the last fifty years for bettering their condition, the causes and measures that brought about the comparatively peaceful and satisfactory relations now existing in England between masters and workmen are subjects deserving special inquiry. Mainly so in view of the great and sudden tension which the labor question has obtained in this country.

J. SCHOENHOF.

## SUGAR INDUSTRY OF GERMANY.

### REPORT OF CONSUL-GENERAL RAINE.

German sugar industry and the competition which the same encounters in all directions cause at present much comment. The reckless extension of the sugar industry in Germany has resulted in overproduction, and led to a crisis, greatly affecting general trade and finances. Other countries, seeing that they could not compete with Germany, have protected their own industry by imposing higher sugar duties and granting other favors for the purpose of counteracting the import of sugar from Germany.

Thus large arrivals of American and Russian crystallized sugar were thrown last year suddenly upon the English markets, and all calculations of German sugar producers, who believe that a crisis could yet be averted by reducing production, neutralized.

The new tariff law of France was promulgated for the special purpose of giving to home manufacturers all possible advantages to enable them to compete successfully with Germany.

Belgium enacted at the same time a tariff imposing high duties upon sugar, practically excluding the German product. Thus the German export has but one market left, that of London, but here again it encounters the competition of all Europe and the colonies.

The system of paying an export bounty has been abandoned in Austria and Russia, and since November 1, 1885, the export bounty

allowed in the United States for refined white sugar of the first class has been reduced from \$2.82 to \$2.60 per 100 pounds, and a further reduction is anticipated.

#### RUSSIA AND AUSTRIA.

The export of American sugar to Continental Europe has practically ceased, and, though the export of German sugar to America still continues, the profits are reduced to a minimum. Austria's and Russia's finances forbade them to pay any longer the export bounty formerly allowed. Austria's legislation in regard to the sugar trade is not yet definitely settled, while Russia has decreed a forced reduction in the production of sugar. For the present fiscal year the sale of sugar is not to exceed 17,000,000, in the next year 20,000,000 poods. Whoever sells beyond the quota allowed to him was to pay an extra tax of 1.70 rubles per pood.

The minister of finances has, however, reserved to himself the right, for the purpose of preventing an artificial rise of inland prices without recurrence to a reduction of import duty, to permit sales of sugar beyond the quota allowed, if such a step should be necessary.

Otherwise the exportation of white and yellow sugar is permitted and the tax refunded, but no further allowance made. It was expected that eventually an imperial order granting an export bounty would be promulgated, but apparently the decree already prepared for this purpose will be abandoned, the small producers claiming that a decree of this kind would expose them to still greater disadvantages in competing with large producers. Besides, it may be well to bear in mind that, in view of the bad financial condition of Russia, the payment of an export bounty would be rather hazardous, while the high charges for transportation are another drawback to make Russian sugar a competitor in the markets of the world.

#### THE COMPETITION OF FRANCE.

The most dangerous opponent of Germany in the sugar market is, at present, France, whose production under the protection of high duties and an enormous export bounty is rapidly increasing. The manufacturers who have accepted the new duty upon raw material are exempted from taxation upon sugar when the amount of yield obtained by the pressing process exceeds 5, and when obtained by the process of diffusion exceeds 6 per cent., while other factories in France are even exempt to the extent of 8, and in the colonies of 12 per cent. The object is clear—encouragement of the cultivation of the best raw material and the use of the most perfect machinery to produce the largest quantities of sugar possible.

In 1883-'84 it required still 1,608 kilograms of beets to produce 100 kilograms of raw sugar; in 1884-'85, 1,467; and in 1885-'86, only 1,098 kilograms, equal to a saving of 25 per cent. in 1886 as against 1883.

The production (reduced to refined sugar) amounted in 1884-'85 to 2,661,062 meter centners (=110.5 pounds avoirdupois), of which 385,776 or 14.5 per cent., were free of taxation, which, every 100 kilograms rating at 50 francs, equals 19,258,800 francs, or 7.23 francs of bounty per 100 kilograms of the total quantity.

In 1885-'86, when the production was the lowest of the last six years, it was 2,642,823 meter centners, of which 780,199, or 29.5 per cent., were tax free; which, taking 50 francs per 100 kilograms, equals 39,009,950

francs, or 14.76 of bounty per 100 kilograms. The lowest estimate of the production for 1886-'87 is reported to be at 3,500,000 meter centners, that of the quantity exempt from taxation at 35 per cent.; the bounty thus could be rated on the whole at 61,250,000 francs, or 18 francs per 100 kilograms. Other French experts rate the probable amount in 1886-'87 at four and a half to five millions of meter centners, which would be equal to 94,000,000-103,000,000 francs, or 20 to 21.6 bounty per 100 kilograms.

With such enormous sums France supports the development of the sugar industry, and gives the latter a preponderance whose full utilization must be considered only as a question of time.

The French colonies and the protection which they receive have been already alluded to.

Spain seeks to encourage and protect her colonies by repealing or reducing export duties, as may be considered most judicious.

#### OTHER NATIONS.

Brazil maintains a similar policy, and the Netherlands have for the same purpose a measure of an extraordinary character under consideration. It is proposed to empower the state to purchase five-eighths of the production of the present year at 9 florins per picul (62.5 kilograms, or 133 pounds), consequently 1-1.5 florins above the present quotation; further, to make advances upon the crop of next year and to consider the propriety of an export bounty of 1-1.5 florins. All this is contradictory to the free-trade traditions of the Netherlands; but relief appears to be required, and though the advances which the colonial banks would be compelled to make might reach 100,000,000 florins and more, it is believed that fear of a general crisis and consequent distress will overcome this time all objections, as based upon the fundamental principles which have heretofore controlled the policy of the Netherlands.

#### ENGLAND.

On all sides we encounter new measures and new expedients for protection, a war of all against all; England alone gets the advantage.

England levies no sugar taxes and duties. The imported article is traded after deducting export bounties, drawback, &c., and the large sums which exporting firms sacrifice for the protection of their industry benefit the London traders, who buy at the lowest possible rates, while consumers are furnished with sugar at constantly declining figures. The English dealers, overrun by agents of all sugar-producing countries, thus control the continental and transatlantic countries, and can establish trade-usages to suit themselves, as unjust and arbitrary they may be to others, as, for instance, was done regarding invert sugar and, more lately, in lowering the valuation of sugar of higher degrees. Foreign industries are compelled to subject themselves to English dictation, while they are powerless to give force to their wishes and interests, as just and equitable they may be.

#### THE SITUATION IN GERMANY.

The *Chemiker Zeitung*, a journal of much influence here, commenting on the state of the sugar industry, and asserting that Germany is still the most powerful of the sugar-producing countries in the world, fears that Germany is rapidly losing its influence in the international market



and becoming the foot-ball of foreign speculators, who, unconcerned about crop anticipations, statistics, &c., continue their enormous business to lower and advance prices at pleasure, and make themselves masters of the situation.

The *Chemiker Zeitung* adds that financial weakness, dissensions, and commercial impotency of a majority of the German manufacturers give the English speculators the most effective assistance.

The German sugar industry enters the third year of the crisis under pretty much the same circumstances as the first, unprepared, without plan and leaders. We see now, as we did then, that some refuse to sell at all; others at any price; many who sell any quantity in advance; others who keep their goods back until financial necessity compels them to dispose of their stock.

Even such refineries as have large capital at their disposal give aid to the lowering of prices by offering white sugar below market quotations, thus destroying all confidence of the customers.

The *Chemiker Zeitung* closes by referring to the free warehouses established by the state, the value of which was not recognized, while, either from habit or old usage, the weekly productions are sold at the current prices, all considerations of supply and demand ignored, and even sugar sold for future delivery without regard to future prices. In Magdeburg alone the sales of sugar on hand amounted to 100,000 cwt. per day last week at current prices.

The same journal suggests, as the only remedy against the irregular conduct of the sugar manufacturers, and as a protection against a further decline of the sugar interests, united action and better use of capital; it fears, however, that after the failure of an attempt of this kind, made last year, the prospects are not very encouraging.

F. RAINE,  
Consul-General.

UNITED STATES CONSULATE-GENERAL,  
Berlin, November 5, 1886.

## SUGAR DUTIES OF FRANCE.

Scarcely a year passes without some legislation on the sugar duties. The law of 1884, which was recently extended for a further period of two years, was intended to encourage growers of beet-root to improve their culture, in order to produce beet richer in saccharine. To this end the duty, instead of being charged on the sugar extracted, is now levied on the root, calculated at a yield of 6 per cent., which was to increase gradually until it reached 7 per cent., in 1890. It was intended that manufacturers should benefit by the surplus which would enter into the consumption duty free. Although the yield was fixed to commence as low as 6 per cent., it was known that in Germany the yield was as high as 9 and 10 per cent. French agriculturists were not at a loss for arguments to prove that even at the rate of 6 per cent. they would be unable to compete with the foreigner. The French Government counted on a loss of 30,000,000 of francs, which was to be abandoned to manufacturers as a bounty. This encouragement has succeeded even beyond expectations. Growers have applied themselves so well to the improvement of their culture, and so large a portion of the production escapes the duty, that the loss to the treasury in 1887 would amount to not less than 72,000,000 of francs. The Ministers of Finance and Agriculture are now preparing a bill to take back a part of the concession made, by sharing the surplus with the manufacturers. This would procure a sum of 36,000,000, and the Government will, it is said, take advantage of the opportunity to raise the duty from 50 to 55 francs per 100 kilos, which would give a further sum of 20,000,000. —(London Economist, November 20, 1886.)

**SUGAR INTERESTS OF JAVA.***REPORT OF MINISTER BELL.*

The minister of the colonies has presented to the Second Chamber of the States General two projects of law providing measures to favor the maintenance of the culture of sugar in Java.

The considerable fall in the price of cane sugar has long since threatened a crisis in the sugar industry of the Dutch East Indies.

For some time the price of sale has remained much below the actual cost of manufacture.

On account of this condition of affairs many financial institutions of this country which have heretofore made important advances to the sugar interests are no longer willing to extend their aid; consequently the industry finds itself upon the verge of complete ruin.

Many petitions have from time to time been addressed to the Chambers, as well as to the Government, by the sugar interests, soliciting relief.

These petitions have usually demanded—

(1) The reduction or complete temporary abolition of the rents due from the manufacturers to the colonial government.

(2) A reduction of the cost of transportation of sugar in Java by the state railways.

(3) Advances to be made by the state to the manufacturers.

In the opinion of the minister of the colonies it cannot be a question of any donation whatever to be made by the treasury to the sugar interests.

Therefore it should neither reduce nor abolish the rents, nor reduce the expense of transportation by the railways of the state.

Nevertheless, according to the views of the minister, the Government is convinced that the general interests of the state require the maintenance as far as possible of the culture of cane sugar.

It is for this reason that the Government has submitted for the action of the States General two projects of law.

According to the first project of the Government, the governor-general will be authorized to grant to the manufacturers who have a contract with the colonial government a delay in the payment of their rents in consideration of the payment of an annual interest of 6 per cent. on the amount due.

By the second project the governor-general is authorized to make advances to the manufacturers who freely follow the culture of sugar.

This advance cannot, however, exceed the sum of 1½ florins for each 100 kilograms estimates upon the harvest of 1886.

These projects of law will be discussed simultaneously with the budget of the Indies for 1887 during the coming month.

The extent of the depression in the sugar trade of this country will be understood when it is known that in 1870 the imports of raw cane sugar from Java were 108,000,000 korrels, whilst in 1885 it fell off to 10,000,000 korrels.

ISAAC BELL, JR.

LEGATION OF THE UNITED STATES,  
*The Hague, October 26, 1886.*

## SUGAR INTERESTS OF JAVA.

Consul-General Ramon O. Williams transmits the following translation of an article which appeared in the *Journal des Fabricants de Sucre* of the 13th October, 1886, "giving an account of the financial measures proposed by the Government of Holland to save the planters of Java and the Dutch bankers from the crisis brought upon them by the great development of the beet-root sugar of Europe. From the fact that, for the same reasons, the planters and bankers of Cuba and Porto Rico are in a similar predicament, I have no doubt that the article will be of interest."

[From the *Journal des Fabricants de Sucre* of October 13, 1886.]

The Times lately announced that the Dutch ministry intended to propose that the chambers should authorize the Government to purchase from the planters of Java five-eighths of their production at the rate of \$3.60 per 62½ kilograms. Moreover, that the Government should be authorized to advance money upon the crop. The *Produce Market Review* remarks that this proportion is absolutely irrational in the economic point of view. "But, after all," this paper adds, "this system would be little different from that adopted in Brazil for the guarantee of central factories. The novelty of the thing consists in the extension of the protective system to cane sugar as well as to that of beet-root. If the colonial producers obtain bounties, like the manufacturers of the beet-root sugar, at what a low price will not England, thus favored, obtain her sugars! Brazil and Java are about entering into the strife with the Continent to furnish us sugar below cost prices."

If a correspondence from Amsterdam is to be believed, the situation of sugar industry in Java is a most critical one, and salutary measures must be adopted there without delay. If a remedy to this crisis is not soon applied, the lower countries, the correspondence says, will not be able to avoid the most terrible of financial disasters. In consequence of the low prices of sugar in Europe and America, owners of plantations and their lessees have speculated to such a great extent that they have placed themselves on the brink of an abyss, and it is to be feared this will totally stop sugar production in Java.

This event would be in every way a great catastrophe. It would at once throw half a million of Javanese laborers out of employment, who would increase the already enormous number of Malay pirates.

Moreover, in view of the strict commercial solidarity existing between the colony and the metropolis, the crisis of Java would immediately rebound to Holland. But this is not all; the planters of Java have borrowed money from several banks of Holland, in order to be able to carry on their work, and these loans amount to about 100,000,000 florins. The ruin of the planters in Java would, in turn, bring about the downfall of the largest banks of Amsterdam and Rotterdam, and the sugar crisis would be followed by a general financial crisis. It is therefore necessary, at all hazards, to save the plantations of the Dutch Indies.

The Dutch ministry has recognized the indispensable necessity of doing something for the sugar industry of Java, and it is for this reason that it has decided to purchase from those planters five-eighths of their production at 9 florins per 62½ kilograms. At present prices (22d September) there is a sacrifice imposed upon the state of 2 florins per picul, or, say, 20,000,000 of florins (about 40,000,000 francs) upon the total production. Besides, advances will be made planters on their crops. On the other hand, a colonial bank is to be established which will give special attention to loans to planters.

The price of 9 florins per picul corresponds to 30 francs 25 centimes per 100 kilograms. At the rate of 8 florins per picul, or 26 francs 80 centimes per 100 kilograms, the sacrifice made by the state would amount to 3 francs 44 centimes per 100 kilograms of sugar.

DEMERARA SUGARS IN THE LONDON MARKET.

In transmitting the following tables, Consul Figyelmesy, of Demerara, writes, September 20, 1886:

When sugar was selling at a high price, the majority of the proprietors of sugar estates in British Guiana spent money freely and, I may say, extravagantly in England and elsewhere. Others, more economical, erected new machinery on their estates and extended their cultivation. Therefore, no one has either money or resources left, and I fear there is a gloomy future for this colony, as well as for all the West Indies, if the present depression continues, as their only industry is sugar.

*Statement showing the fluctuations of Demerara sugars per cwt. in the London sugar markets during the last ten years.*

Date.	Crystals, finest V. P.		Muscovado.		Date.	Crystals, finest V. P.		Muscovado.	
	Value in sterling.	Value in dollars.	Value in sterling.	Value in dollars.		Value in sterling.	Value in dollars.	Value in sterling.	Value in dollars.
1875.	s. d.		s. d.		1880	s. d.		s. d.	
January	26 0	66 24	21 0	55 04	December 2	27 6	66 60	19 6	44 68
April	23 6	5 64	20 0	4 80	December 31	28 0	6 72	20 0	4 80
July	23 6	5 64	19 9	4 74	1881.				
October	25 3	6 06	19 6	4 68	March 17	29 3	7 02	20 3	4 86
December	26 6	6 36	19 0	4 56	June 24	32 3	7 74	23 3	5 58
1876.					July 5	31 9	7 62	22 9	5 46
January 6	26 0	6 24	18 6	4 44	1882.				
April 4	22 0	5 28	18 3	4 38	January 8	29 6	7 08	21 0	5 04
July 4	24 6	5 28	22 3	5 34	March 8	28 6	6 84	19 6	4 68
October 2	25 0	6 00	21 6	5 16	June 23	29 3	7 02	20 3	4 86
November 3	26 9	6 42	24 9	5 94	July 5	29 0	6 96	20 3	4 86
November 28	34 3	8 22	30 0	7 20	October 5	27 9	6 66	19 9	4 74
December 6	34 3	8 22	30 0	7 20	December 20	26 0	6 24	18 0	4 32
1877.					1883.				
January 4	33 9	8 10	29 6	7 08	January 2	26 0	6 24	18 0	4 32
April 2	29 6	7 08	25 3	6 06	April 25	27 9	6 66	19 6	4 68
June	33 9	8 10	27 3	6 54	June 22	27 6	6 60	19 0	4 56
July 14	33 9	8 10	25 9	6 18	October 6	29 3	7 02	18 3	4 38
August 31	30 6	7 32	23 3	5 58	December 19	27 3	6 54	17 6	4 26
September 29	33 6	8 04	24 6	5 88	1884.				
October 30	31 9	7 62	23 3	5 58	January 2	27 3	6 54	17 3	4 14
November 30	29 0	6 96	20 0	4 80	March 31	24 6	5 88	15 0	3 60
December 29	29 0	6 96	19 6	4 68	June 10	25 3	6 06	18 9	3 80
1878.					July 7	22 9	5 46	12 0	2 88
January 5	30 0	7 20	29 0	4 80	September 4	23 3	5 58	12 6	3 00
April 1	29 0	6 96	20 9	4 98	October 27	21 9	5 22	12 3	2 94
July 2	29 0	6 96	20 6	4 92	December 4	18 9	4 50	10 9	2 58
September 30	28 3	6 78	19 0	4 56	December 31	17 6	4 20	10 3	2 46
December 28	27 9	6 66	19 0	4 56	1885.				
1879.					March 18	19 0	4 56	11 9	2 82
January 11	27 3	6 54	18 9	4 50	May 22	21 6	5 16	15 3	3 66
March 31	25 9	6 18	18 0	4 32	June 11	22 3	5 34	15 9	3 78
June 25	27 9	6 66	16 9	4 02	July 2	22 0	5 28	15 0	3 60
August 13	28 9	6 90	17 6	4 20	September 5	20 9	4 98	14 6	3 48
September 29	27 6	6 60	16 3	4 38	December 29	21 0	5 04	14 9	3 54
November 15	34 0	8 16	24 3	5 82	1886.				
December 28	32 6	7 80	27 6	5 48	January 9	21 3	5 10	14 9	3 54
1880.					March 27	18 6	4 44	13 0	3 12
January 2	32 6	7 80	22 6	5 40	June 28	17 0	4 08	11 0	2 64
March 23	28 9	6 90	21 0	5 04	July 30	18 0	4 32	11 3	2 70
June 28	28 9	6 90	20 6	4 92	August 18	18 6	4 44	11 0	2 64
September 24	28 9	6 90	20 0	4 80	September 17	19 0	4 56	11 0	2 64

Exchange \$4. 80 to the pound sterling.

PH. FIGYELMESY, Consul.

**THE SUGAR INDUSTRY OF AUSTRALIA.***REPORT OF CONSUL GRIFFIN.*

In the face of many difficulties sugar production has become firmly established in Australia. At present the business is depressed, but it is not any worse in that respect than the same interest in other countries. There is overproduction of the article, and though that state of affairs does not extend directly to Australia, the low prices of sugar in Europe and America have affected the industry here. Never before has the price of sugar been so low, nor is there much prospect of an immediate change.

**THE TARIFF.**

It is an unfortunate thing for the sugar interest here that every one of the Australian colonies has its own special tariff. This state of affairs not only awakens jealousy between the colonies, but occasions a conflict of interests. For instance, sugar from Queensland, the largest sugar-producing colony in the group, cannot be admitted into New South Wales except upon the same terms as that imported from the Straits Settlements, China, Cuba, and other countries, and the result is Queensland finds a more profitable market for her product in Europe than in these colonies. The efficient shipping facilities between Queensland and London, Glasgow, and other British ports, together with the low cost of freights, are further inducements for shipping to the European ports. In this connection I will mention that planters now obtain such low rates of freight that the cost of exporting sugar to London from Queensland is seldom more than £1 10s. (\$7.29) per ton, and moreover it is said that they can obtain even in China and Japan from £2 (\$9.73) to £3 (\$14.59) more for their sugar than in Australia. There is also an effort being made here to find a market for Australian sugar in the Pacific slope of the United States. The trade between the colonies and San Francisco is steadily increasing, and there are strong reasons for the belief that in a few years it will swell to very large proportions.

It is certain that American shipping at the ports of Sydney and Newcastle, in New South Wales, has more than quadrupled in the last eighteen months. As the production of sugar increases here the desire to export to America will increase with it.

It is a curious subject of observation and inquiry that two countries like Australia and the United States, which have so many interests in common, should continue to confront each other with hostile tariffs, but as long as the colonies themselves are unable to establish anything like a free interchange of products with one another it is hardly reasonable to expect them to perfect reciprocal relations with foreign countries.

The customs regulations of New South Wales approach nearer to the doctrine of free trade than those of any of the other colonies, but, notwithstanding their so-called free-trade principles, they impose a very heavy tax upon American products. The people here complain that we exclude their sugar and wool and other raw products from our markets, and at the same time they show no disposition to remove the heavy colonial tax on American tobacco, rosin, and timber; indeed they are constantly agitating for an increase of duties on these articles. Since April last they have increased the duties upon timber from 2s. (48 cents) per 100

superficial feet to 3s. (73 cents) per 100 feet. They tax kerosene at the rate of 6d. (12 cents) per gallon; tinned fruit at 2d. (4 cents) per pound; rosin, 2s. (48 cents) per barrel; jams, 1d. (2 cents), per pound; biscuits, 2d. (4 cents) per pound; honey, 1d. (2 cents), and several other articles in like proportion. Tobacco is taxed at 3s. (73 cents) per pound. As that article is classed as a luxury, the tax is said to be levied for revenue only. It happens, however, that the cultivation of tobacco is a colonial industry, and the excuse given for levying the tax may be regarded as a very poor one.

The tax upon sugar in New South Wales is 6s. 8d. (\$1.62) per cwt. for refined and 5s. (\$1.21) for raw. Besides the taxes on the articles which I have enumerated, the people have to pay a tax of 5 per cent. ad valorem upon a very large number of articles upon which no specific duties are levied. If a colony like New South Wales, professing to be wedded to the principles of free trade, imposes duties both special and ad valorem upon such a large number of articles, what may we not expect from Victoria and other colonies of the group which openly avow the doctrine of protection?

The impression seems to be gaining ground here that the American duties upon sugar and other raw products of Australia will shortly be repealed, and the fact is not unfrequently cited by the Sydney press that the United States has not been able with the help of her high protective tariff to produce more than about 12 per cent. of the sugar she consumes. Attention has also been directed here to the fact that the sugar industry in the States is not as large as it was thirty or forty years ago.

In 1853 the total sugar product of the United States amounted to 449,324 hogsheads, but in 1884 it was only 170,431 hogsheads, being exactly 273,873 hogsheads less than in 1853. One of the most astonishing things in connection with the matter is that the present American tariff on sugar is fully six times more than the tariff of 1853, therefore it is argued that the industry was far more prosperous under a low tariff than under a high one. Of course there is a marked difference between the conditions of labor of the two periods, but the labor question, although an important one, does not form the chief factor in the production of sugar, and it is thought that the cost of labor is higher in Australia than in Louisiana and other sugar-producing States of the Union.

#### DEVELOPMENT OF THE INDUSTRY.

Although New South Wales was the first colony to engage in the cultivation of cane for the production of sugar, Queensland appears to have made the first decided advances toward the establishment of the industry. Sugar-cane was first grown at Port Macquarie, in New South Wales. Governor Darling, writing from Port Macquarie in 1828, said, "Both sugar and tobacco are now cultivated successfully in this delightful country." At a later period sugar-cane was tried in the botanical gardens at Brisbane, with very favorable results. No attempt, however, was made to crush the cane until about twenty years ago, when the late Mr. Thomas Scott, of Brisbane, made a series of successful experiments in crushing sugar with such mechanical appliances as were at his command. These experiments furnished abundant evidence that the industry could be carried on in the colonies profitably. The price of sugar at that time was about double what it is at present, and that brought to Australia was a very indifferent sort of raw musco-

vado, which would to day be regarded as unfit for use save for refining purposes.

Between the years 1865 and 1872 a number of plantations were established in the north of Queensland and in the Macleary and Clarence districts of New South Wales. The most extensive plantations, however, were established in the Mary and Mackay districts, Queensland. In the latter district great skill and powerful machinery were brought to bear upon the industry, especially at the Yengarie factory, where the business was conducted upon a system similar to that of the beet-root factories in Germany and other European countries. The sugar made at Yengarie factory was of a fine white grain and rich in saccharine matter. A few years afterward the Colonial Sugar Refining Company erected powerful crushing-mills upon the banks of the Macleary, Clarence, and Richmond Rivers, and from that time to the present this company has been in advance of every other in Australia in regard to everything in relation to the production of sugar.

#### LABOR.

The Colonial Sugar Company, at a very heavy cost, has erected large refineries at Sydney, New South Wales, at Melbourne, Victoria, and at Auckland, New Zealand. It has also erected a number of crushing-mills in the Fiji Islands, one of which is said to be the largest in the world. From the outset the company experienced much difficulty in obtaining suitable labor for the cane fields. In New South Wales the cane has always been cultivated by white men, and generally upon their own land. At first, and indeed up to the close of last season, the farmers sustained considerable losses in attempting to make sugar with defective machinery, but that plan is now abandoned, and the farmers sell their cane to the large companies. In Queensland the planters have had to depend mainly upon colored labor, and they have had to undergo much abuse on account of the manner in which such labor was obtained. A great hue and cry was raised in Britain against what was called the "Queensland labor traffic," and the planters were charged with encouraging the most horrible outrages and crimes. It is certain that the natives of the South Sea Islands were in many instances forced aboard the labor vessels, and that while this recruiting was going on many horrible massacres occurred. There is, however, not a particle of truth in the statement that the natives were ever badly treated after they once reached Queensland.

The most searching investigations by the government failed to convict a single planter of inhuman treatment of his employés. The government nevertheless resolved to put a stop to the introduction of black labor, and this awakened much opposition on the part of the planters. The latter complained that their business was being destroyed, and that the government did not understand the difficulties they had to encounter. These complaints were followed by a persistent agitation for the separation of Northern Queensland from the government. The premier, the Hon. S. W. Griffith, visited the sugar districts with the view of allaying the hostility. He made a number of conciliatory speeches, in which he spoke of the evils that would follow separation, and dwelt upon the advantages to be derived from the introduction of white labor. He admitted that the planters had many grievances, but thought that a satisfactory settlement could be reached through the exercise of patience and forbearance on both sides.

## DIVISION OF THE INDUSTRY.

In the mean time the agitation continued, and there is every reason to believe that a separate colonial government will soon be established in Northern Queensland, where white labor, on account of the great heat, is said to be impracticable. In 1875 the Queensland government commissioned Mr. Angus Mackay, now agricultural instructor in the Technical College at Sydney, to visit the West India Islands, the United States, and other countries, for the purpose of investigating and reporting upon the systems of labor, of cane cultivation, sugar manufacture, sugar machinery, and other matters concerning the sugar industry of those countries. Mr. Mackay's reports, which had an extensive circulation throughout the southern hemisphere, furnished conclusive evidence that a great change was going on in the sugar industry, and that to make the business profitable it is indispensably necessary to separate cane growing from sugar-making.

During the year 1876 Mr. Mackay visited the great factories of the French West India Islands, and his reports upon those establishments are exhaustive and instructive. During the same year he visited Jamaica, San Domingo, Cuba, St. Lucia, Santa Cruz, and other sugar-growing countries. After studying the industry in those places, he went to the United States and visited the various plantations on the banks of the Lower Mississippi. His reports upon these plantations are elaborate and form, in many respects, the most valuable contributions ever published upon the sugar industry of the United States.

These reports are exceedingly complimentary to the enterprise, skill, and industry of the American sugar-planters.

Mr. Mackay found much to commend in their system of draining and farming the lands that are below the level of the waters of the Mississippi River. From Belair plantation, owned by Mr. John Diamond, of New Orleans, Mr. Mackay shipped to Queensland sugar-cane of the Creole variety, now extensively cultivated in both Queensland and New South Wales. Mr. Mackay was aware that out of forty or fifty varieties of cane grown in the colonies very few of them yielded much sugar. The farmers usually selected the best looking canes, but many of these, such as the Bourbon and the Cherrybon, although splendid in appearance, would not stand the test. Mr. Mackay observed that the Creole variety was of rapid growth and, although of small size, yielded a large percentage of juice. The Creole cane is of a dark purple color, heavy in weight, with the eyes coming very close together. Mr. John McDonald, superintendent of the St. Helena plantation, Moreton Bay, Queensland, obtained samples of it through Mr. Mackay, and found it to do extremely well. In the State of Louisiana, where the sugar-cane has only between six and seven months of hot, growing weather, the Creole comes to maturity before the approach of cold weather. It is usually cut down in November, on the first appearance of frost. Its yield is about 20 tons to the acre. Mr. Mackay stated in his reports that the production of sugar in Australia, in order to become a large and profitable industry, should be conducted on the plan adopted in America. He said that the American planters, in selling their cane to the sugar companies with sufficient capital to employ the necessary machinery and skill, realized about 60 per cent. more than the Queensland farmers were enabled to do with their feeble little crushing-machines. The first official returns of the sugar product in Queensland were published in 1865, and they showed that during that year 6 mills were in operation, which produced 168 tons of sugar and 13,000 gallons of molasses. In



1875 there were 65 mills, and the product was 6,226 tons of sugar and 357,614 gallons of molasses, and the industry has increased ever since.

The subjoined table shows the number of mills and number of acres of cane crushed and the products of sugar and molasses in Queensland for each year, 1873 to 1885, inclusive:

Year.	Acres crushed.	Mills.	Quantity of sugar manufactured.	Quantity of molasses manufactured.
			<i>Tons.</i>	<i>Gallons.</i>
1873	5,380	66	7,987	442,253
1874	6,978	71	12,108	651,259
1875	7,668	66	6,322	438,950
1876	7,245	70	8,214	416,415
1877	8,043	61	12,243	510,200
1878	10,702	68	13,525	570,301
1879	11,409	70	18,714	641,486
1880	12,306	83	15,564	602,969
1881	15,550	103	19,051	753,658
1882	16,874	120	15,762	663,825
1883	25,792	152	36,148	1,071,413
1884	29,951	157	32,010	756,080
1885	40,756	166	59,225	1,781,266

It will be seen, from the returns for 1885, that the average yield per acre of cane crushed is about 29 cwt., against 21 cwt. for the year previous. Some of the districts, for instance the Herbert, averaged 37 cwt., Cairns averaged 36 cwt., and Mackay 30 cwt. There were 10,805 more acres of cane crushed in 1885 than in 1884, and there was also an increased return of 8 cwt. per acre.

#### DISTILLATION OF RUM FROM SUGAR IN QUEENSLAND AND NEW SOUTH WALES.

There are six distilleries in Queensland, manufacturing about 150,000 gallons of rum per annum from molasses. These distilleries are the property of the large sugar companies; the smaller mills do not utilize the molasses, but allow it to run into the rivers. The distilleries, however, make less rum than they did ten years ago, when their product was about 165,000 gallons.

The distillation of rum from molasses in New South Wales, like that in Queensland, has made little or no progress during the last decade. In 1876 the number of gallons distilled was 218,203, and in 1885 it was 193,343 gallons. The amount of duty paid on rum manufactured in New South Wales for home consumption in 1885 was \$41,745, the duty being about \$3 per gallon. Some of this rum is exported to New Caledonia under the head of white spirits. The average yield of spirit is about  $4\frac{1}{2}$  proof gallons to every 1 cwt. of molasses. The molasses made by the small mills, with the exception of a very small quantity used by the confectioners, is wasted, principally on account of its impure quality and acrid taste. The inspector of distilleries here is of the opinion that this material could be utilized by the introduction of new and improved distilling machinery from Europe and America.

#### QUANTITY OF SUGAR PRODUCED IN NEW SOUTH WALES.

The yield of sugar in New South Wales for the year 1886 was 41,359,360 pounds, against 21,835,072 pounds for the year 1885. The following table shows the number of acres in cane and the quantity of

sugar manufactured in New South Wales for each year from the 31st of March, 1877, to the 31st of March, 1886, inclusive:

Year.	Acres in cane.	Quantity.	Year.	Acres in cane.	Quantity.
		<i>Pounds.</i>			<i>Pounds.</i>
1877.	3,524	10,523,529	1882.	4,983	17,813,317
1878.	3,331	16,883,328	1883.	6,362	11,650,388
1879.	2,949	18,298,736	1884.	7,583	35,220,640
1880.	3,675	17,229,996	1885.	6,997	21,835,072
1881.	4,465	16,352,336	1886.	7,583	41,359,360

### QUEENSLAND SUGAR IMPORTS.

The quantity of sugar imported into Queensland for the year 1885 amounted to 707 tons, 31 cwt., 5 quarters, 24 pounds, valued at \$83,480. The value of the imports of sugar for 1884 was \$77,445. Of the imports for 1885, 564 tons, 14 cwt., 2 quarters, 17 pounds, consisted of raw sugar, valued at \$66,575, and 143 tons, 17 cwt., 3 quarters, 7 pounds of refined sugar valued at \$16,905.

The greater part of the raw sugar came from New South Wales and Victoria; that from Victoria was obtained from China or Fiji, and was sent there for transshipment to Queensland. The imports into Queensland of refined sugar come principally from Great Britain, Hong-Kong, and New South Wales. The quantity imported from the United States amounted to only 7 tons, 17 cwt., 22 quarters, valued at \$1,095.

During the year 1884 the imports from the United States were nil. If any American sugar found its way to the Queensland market during that year it was shipped by way of London or Sydney and entered at the customs as British produce.

The following table shows the quantity and value of raw and refined sugar imported into the colony of Queensland for the year 1885, with the names of the countries whence imported:

Country.	Raw.				Refined.			
	Quantity.		Value.		Quantity.		Value.	
	Tons.	Owt.	Qrs.	Lbs.	Tons.	Owt.	Qrs.	Lbs.
United Kingdom .....	2	11	..	..	67	18	2	18
New South Wales .....	258	9	1	..	30,500	29	16	3 21
Victoria .....	351	9	1	17	31,190	6	3	1 2
New Zealand .....	..	..	..	..	..	1	2	..
Hong-Kong .....	52	4	..	..	..	..	..	..
United States .....	..	..	..	..	82	7	17	1 22
South Sea Islands .....	..	..	..	..	5	..	..	..
Total .....	564	14	2	17	66,575	143	17	3 7

## QUEENSLAND SUGAR EXPORTS.

The following table shows the quantity and value of raw and refined sugar exported from the colony of Queensland for the year 1885, together with the names of the countries to which exported.

Country.	Raw.		Refined.	
	Quantity.	Value.	Quantity.	Value.
	<i>Tons. Cwts.</i>		<i>Tons. Cwts.</i>	
United Kingdom .....	17 7	\$6,085		
New South Wales .....	15,717	1,358,690	6,096 14	\$738,775
Victoria .....	13,608 6	1,177,650	1,143 7	157,005
South Australia .....	400 9	30,440	1 ..	135
Tasmania .....	42 5	3,025		
New Zealand .....	603 10	63,575	35 ..	2,625
Hong Kong .....	802 19	649,965		
New Guinea .....	.. 19	105	.. 3	15
South Sea Islands .....	4 6	435	.. 15	70
Total .....	30,246 1	2,704,970	7,266 19	890,635

## NEW SOUTH WALES SUGAR IMPORTS.

The imports of sugar into New South Wales for the year 1885 amounted to 27,720 tons, valued at \$2,500,420, against 33,579 tons, valued at \$4,289,540 for 1884, showing a decline in quantity of 5,859 tons and in value of \$1,789,120.

The following table shows the quantity and value of raw and refined sugar imported into the colony of New South Wales for each year from 1875 to 1885, inclusive:

Year.	Raw.		Refined.	
	Quantity.	Value.	Quantity.	Value.
	<i>Tons.</i>		<i>Tons.</i>	
1875 .....	20,054	\$2,525,870	61	\$21,980
1876 .....	21,254	2,698,345	175	31,780
1877 .....	22,841	2,854,098	317	61,385
1878 .....	27,458	3,486,170	215	27,285
1879 .....	35,108	4,174,580	233	42,110
1880 .....	19,785	2,698,765	157	27,175
1881 .....	27,164	3,278,610	295	56,740
1882 .....	32,491½	4,191,280	142½	26,425
1883 .....	27,527	3,716,870	98	18,575
1884 .....	33,579½	4,216,925	458	72,615
1885 .....	27,361½	2,500,420	365½	50,285

The following table shows the quantity and value of raw and refined sugar imported into New South Wales for the year 1885, together with the names of the countries whence imported :

Country.	Raw sugar.				Refined sugar.					
	Quantity.				Value	Quantity.				Value.
	Tons.	Owt.	Qrs.	Lbs.		Tons.	Owt.	Qrs.	Lbs.	
Great Britain .....	405	2	8	25	\$38,665	117	10	2	27	\$18,045
Victoria .....	2,432	1	..	2	241,565	105	13	1	14	12,585
South Australia .....	485	10	8	18	51,420	33	19	1	27	5,500
Queensland .....	9,355	3	8	4	848,850	5	4	..	6	500
Tasmania .....	20	..	..	..	2,300	..	..	..	..	..
New Zealand .....	544	3	1	..	32,650	..	..	..	..	..
Fiji .....	7,620	8	2	18	669,675	..	..	..	..	..
Hong-Kong .....	3,275	13	1	18	340,020	6	..	3	12	1,255
United States .....	102	2	2	3	11,525	66	16	1	9	3,020
Java .....	2,002	14	3	22	117,500	..	..	..	..	..
Mauritius .....	944	12	..	23	114,650	..	..	..	..	..
France .....	87	13	..	18	4,000	15	5	2	..	2,140
Germany .....	133	6	1	6	11,310	..	2	..	..	15
South Sea Islands .....	3	16	3	22	290	..	6	..	8	55
China .....	..	..	..	..	..	14	19	2	..	2,000
Belgium .....	..	..	..	..	..	..	..	..	..	..
Total .....	27,361	10	..	11	2,500,420	365	17	3	19	50,235

## NEW SOUTH WALES SUGAR EXPORT.

The subjoined table shows the quantity and value of raw and refined sugar exported from the colony of New South Wales for each year from 1875 to 1885, inclusive :

Year.	Raw sugar.		Refined sugar.	
	Quantity.	Value.	Quantity.	Value.
	Owt.		Owt.	
1875 .....	18,408	\$136,050	50,066	\$404,830
1876 .....	7,700	64,270	104,652½	846,150
1877 .....	9,057½	70,300	81,388½	502,245
1878 .....	10,046	78,040	84,527	681,615
1879 .....	30,431	211,545	105,623	853,100
1880 .....	89,482½	288,125	105,280	867,005
1881 .....	13,728½	102,605	73,082½	584,730
1882 .....	16,809	123,925	48,771	386,290
1883 .....	15,562	109,510	40,285	307,145
1884 .....	25,699	132,715	24,593	188,625
1885 .....	36,925	183,335	2,229	15,830

The following table shows the quantity and value of raw and refined sugar exported from New South Wales for the year 1885, together with the names of the countries to which exported :

Where exported.	Raw sugar.		Refined sugar.	
	Quantity.	Value.	Quantity.	Value.
Great Britain.....	Cwt. 285	\$1,600	Cwt. 20	\$190
Victoria.....	10,060	51,425	847	6,540
South Australia.....	2,973	15,725	100	700
Tasmania.....	2,867	13,585	115	905
New Zealand.....	1,688	8,520	447	3,185
Queensland.....	2,671	16,040	288	2,145
West Australia.....	27	185	7	75
South Sea Islands.....	1,131	6,285	17	150
New Caledonia.....	5,497	30,505	372	2,985
Fiji Islands.....	102	290	6	45
Norfolk Islands.....	43	250		
New Guinea.....	10	50		
Hong-Kong.....	9,551	39,175		
Total.....	36,925	193,305	2,229	16,830

The sugar manufactured by the Colonial Sugar Company is of superior quality and contains from 95 to 99½ per cent. of pure saccharine. The company claims to have all the latest improvements in machinery.

The most extensive sugar establishment, however, in Australia is that of Messrs. Cran & Co., at Bundaberg, Queensland. It has a frontage of 200 feet and a depth of 225 feet, with a stack 135 feet high. The engine is of 250 horse-power, and about 90,000 gallons of juice are extracted daily.

From the factory, pipes are laid under the roadways, connecting with crushing-mills on plantations in every direction for a distance of ten miles. The juice is specially prepared by treatment with lime for transit through the pipes.

This method is found to be very successful, as it saves the cost of carting the material from the mills to the refinery. The planters usually get 10 shillings (\$2.43) per ton of cane of a density of about 8 degrees.

Besides the refinery at Bundaberg, there are eight or nine factories engaged in making vacuum-pan sugar. The sugar industry has caused quite an important settlement at Bundaberg. The town has now several thousand inhabitants, two banks, a school of arts with a library of 2,600 volumes, and several churches. It is situated on the banks of the Burnet River, 10 miles from the mouth and about 270 miles north of Brisbane. The district in which the town is situated is a rich agricultural one and has about 30 or 40 sugar-mills in operation.

The Queensland government has recently voted the sum of £50,000 for the purpose of establishing central sugar-mills, with the condition that European labor shall be employed. Three places, all north of Rockhampton, have been selected by the instructor as the most eligible.—£18,000 for one, £20,000 for a second, and £12,000 for a third; but Mr. Hodgkinson, to whose judgment the business has been consigned by the government, is clearly in doubt whether, with low prices in sugar and untrustworthy labor, apt to strike at a critical time, success will follow the undertaking. He thinks one man and family might work 20 acres of cane, but that is doubtful in a moist and hot climate.

## SUGAR-MAKING MACHINERY.

The great bulk of machinery used in crushing and refining sugar in Australia is of British manufacture, very little of it coming from the United States and France, and a still smaller proportion from Germany. American machinery is, however, admitted to be superior to all others. It not only runs more smoothly than any other, but at the same time is less apt to get out of order, and when out of order it is very easily repaired. I regret to say, however, that there is a prevailing opinion here that the higher cost in the United States renders it impossible for their manufactures to compete successfully with those of Great Britain.

Not long ago several articles from the *Scientific American*, descriptive of sugar-making machinery employed in the great factory of Claus Spreckles, at San Francisco, were copied in the Australian papers, and attracted very general attention, and I do not doubt if American manufacturers would take the same pains to advertise their machinery here as they have done in Central America, the West Indies, and the Hawaiian Islands, the trade in such articles would soon be very much larger than it is. Too much praise cannot be bestowed upon the American vacuum-pans; multiple effects, boiler feeds, combined vacuum and water pumps, pumping gear, crystallizing wagons or sugar coolers, defecators, diffusion batteries, clarifiers, evaporators, centrifugal machines, char-kilns, wringing machines, &c.

As yet none of the Australian refineries have introduced machinery for the manufacture of sawn cubes or block sugar, and as this article is not only very popular here, but is preferred to any other kind for table use, there should be little difficulty in inducing sugar companies to manufacture it. The cost of making these cubes is about the same as that of ordinary granulated or crystal sugar. Indeed, it is said that one-twentieth of a cent a pound will more than cover the expense of converting sugar into cubes.

A refinery that does not make hard sugar could by the employment of one of the American machines, and at a cost not to exceed \$2,000 or \$3,000, add largely to their profits during the year.

Some of these machines turn out easily four or five thousand pounds of sugar per hour. Only five men are required to run one of them, including the labor of putting the sugar in and taking it out from the stoves or drying rooms.

G. W. GRIFFIN,  
*Consul.*

UNITED STATES CONSULATE,  
*Sydney, New South Wales, August 4, 1886.*

## SUGAR WORKS OF BRAZIL.

## REPORT OF CONSUL ATHERTON.

There can be no doubt that the sugar factories of Brazil will be a good thing for the country. The Central Sugar Factories lost last year £50,000, and will lose as much this year. They contracted for cane for ten years, and this year and last they are paying double price for the cane over its market value. They have poor machinery. As it is they are now turning out sugar that is worth more than double the price of ordinary sugar, and it can be used as it comes from the factory. Most

of the product will be sold in South America. The export duty on sugar is now over 8 per cent. on its declared weekly value.

Two new sugar factories are commencing to grind this month. They have better machinery, and, I believe, do not pay as much' for their cane. Later I shall be able to report these operations.

The Allianca is expected to arrive on the 22d on her way to Buenos Ayres. I have no doubt that it will turn out well running the steamer to Buenos Ayres, not only for the company, but also for our exporters, and increase the duties paid to the Government; only this should be at least a monthly line, stopping only at this port and Rio de Janeiro on their way to Montevideo and Buenos Ayres.

HENRY L. ATHERTON,  
*Consul.*

UNITED STATES CONSULATE,  
*Pernambuco, October 18, 1886.*

## TRADE OF THE UNITED STATES WITH THE ARGENTINE REPUBLIC.

### REPORT OF CONSUL-GENERAL HANNA.

In view of the settled anxiety on the part of this Government to engage in closer commercial relations with the United States, and active movements in progress for establishing an American line of steamships between New York and Buenos Ayres, I have thought the Department might regard it worth while to consider some conclusions reached by a personal inspection of the route named, with reference to its safety, chief points of trade, the character of commerce it would probably foment and develop, and its feasibility and importance to the trading and manufacturing industries of the United States.

Before entering into the details of the question it may be proper to note that the United States and Brazil Mail Steamship Company, a corporation of the State of New York, and one or two other companies have recently had agents here surveying the field and negotiating with the Argentine Government in the matter of subsidy in aid of their designs to engage in this trade. They find a friendly and willing spirit on the part of the ministry in charge of such questions, but numerous and stubborn difficulties otherwise.

The long-established plant of the Lamport & Holt English ships, with their 65 vessels already in the service, securely resting upon a most enviable reputation for safety and business probity, with tried and efficient agencies in every port, their business in a great degree already embracing New York, Antwerp, and the vast trading centers of England, are liberally paid for the mail service they are doing; also the Pacific Steam Navigation Company, with their great and powerful ships plying semi-monthly between London, Southampton, Liverpool, the Brazilian coast, the River Plate, through the straits of Magellan, and up the Pacific coast to Panama; also the French, Italian, and German lines, each performing monthly service between their respective countries and the Argentine Republic, now the center of commercial attraction of all the American states south of the Caribbean Sea, altogether form a powerful drawback to any additional and weak enterprise seeking to open new paths of trade in South Atlantic waters. It may sound strangely, but there are now 100 regular steamships plying between Rio de Janeiro and Buenos Ayres.

## PROPOSED AMERICAN LINE.

The United States and Brazil Mail Steamship Company, as you are aware, has already a monthly service between New York and Rio, under the patronage of the Brazilian Government. The agents here, Messrs. Wilson, Sons & Co., well-known commercial agents of very wide connections and established reputation, have already been in communication with this Government with a view to procure a subsidy for extending their Brazilian line to this port. They have been cordially received by the Government, but have been met with formidable objections. The hindrances suggested are the many stops made along the Brazilian coast, and the further fact of the imperative necessity, during the most of the year, of quarantine against the yellow fever of Rio, which surely would cause a delay between that point and this of four days during the most of the year.

I send herewith, as an inclosure, the petition of Yarrow, Kett & Co., by Green & Johnson, all agents of Wilson, Sons & Co., offering to run the United States and Brazil steamships here for a subsidy of \$5,000 for each voyage made from New York to Buenos Ayres.

The minister for the interior, in whose department the petition is pending, has propounded to them some very pertinent questions bearing upon the slow progress and sanitary hindrances in the way of the extension of the line already operated between New York and Rio. I understand, however, the Government is willing to give them a subvention of \$100,000 gold for twelve annual trips between New York and this port, stopping at no Brazilian city this side of Para, near the mouth of the Amazon. This would be \$8,333.33½ per trip—a strong inducement. It is quite desirable that it may be accepted, if not by the United States and Brazil Mail Steamship Company, by some other able and willing to put on the line. There is little room to doubt that it will prove eminently successful to its owners, and be the inauguration of a prosperous trade between the two countries, and in time be so enlarged as to become dominant, as the Lamport and Holt line now is, between the River Plate and the European coast.

## TRADE WITH THE UNITED STATES.

We have but a limited trade now with this country, mainly because merchants will not venture to make or fill orders by slow and uncertain lines of communication.

The certainty of rapid transit in maritime traffic is about the same thing in that regard, which stability is in all business—the *sine qua non* of the entire system. The commercial world will not consent to grope its way in the dark. Information about changes at hand and changes to come are the primary essentials of its success. It must know what it is doing, and in a distant country like this its ventures largely follow the advices of the mails. A regular, vigorous, trustworthy postal service, and frequent ships coming and going at fixed certain intervals, are the chief concern of maritime merchants everywhere—a need which has never yet been supplied here. The solution seems easy, that these two essentials form the condition precedent to an extended trade between the United States and the Argentine Republic; the necessity is present and pressing. Will the steamships and the mail service be supplied before all is transferred to the European markets? The great fact we know still remains to us, that the inventive genius and boundless raw material of the United States afford us something of a reserved guar-



antee of safety, but that is about all that will be left to us if our enterprise does not speedily stretch out its hand in this direction. This is a wonderful country of marvelous possibilities. Do we want to share in the benefits it offers to the commercial world, accept what it offers in exchange for its needs, or shall we passively let others have that which is rightfully our own?

The route now traversed by the United States and Brazil Mail Steamship line, with a brief description of the ports touched, together with a summary of their exports and imports, and the approximate distances of such ports from New York, may be of interest to the Department, in view of the improved mail service confidently anticipated in connection with the line of steamers the Argentine Government, with so much liberality, now offers to subsidize. The ports and the volume of their trade will be noted in the order in which they stand in the existing route.

#### NEWPORT NEWS, VA.

This port is probably our best outlet for all south-bound Western flour, lard, bacon, and other South American merchandise, being the terminus of the Chesapeake and Ohio system of railroads, which, with its connections, reaches all the great trade-centers of the West. Immense quantities of flour are now being especially manufactured for the Brazilian markets, and form a broad basis for the exchange of that country's products. Newport News is an admirable harbor, as the naval movements there in the history of our wars amply testify. The harbor is 22 miles from the sea, with deep water all the way, and conveniently located to the great coal-fields of Virginia.

#### ST. THOMAS (DANISH WEST INDIES).

This is the next port on the route. The name of the little city on the island is Charlotte Amelia. It was once the stronghold of Bluebeard's pirates, for years the scourge of the West India waters. The port itself is of safe and easy access, a supply-station for a vast number of ships, where United States coal finds a convenient and profitable market. It is supplied with a large floating dry-dock for the repair of disabled ships. The port charges are insignificant. Its imports from the United States are flour, salt, beef and pork, bread in cans, kerosene oil, cooperage stuff, staves, and hoop-poles. It is the central point for the distribution of mails for all the West India ports. Its register shows an average of about 4,800 vessels calling there annually. The population of the island is reckoned at 30,000. The Danish Government maintains a strong garrison there, which insures excellent police regulations.

#### BARBADOES (ENGLISH WEST INDIES).

This island is the most windward and important of the English West Indian possessions. The population is something near 180,000. The port is of easy access and the charges are light.

The climate is healthy and epidemics unknown.

The chief imports from the United States consist of bread in cases, corned and salted beef and pork, all kinds of cooperage material, a specific class of dry goods, sugar-mill machinery, kerosene oil, American buggies, jams and jellies, all sorts of canned goods, salt mackerel and other kinds of salt fish, in fact nearly all grades of food products find ready sale there. It also has cable communication with England

and the United States. Barbadoes is a distributing point, and imports not only for home consumption, but for export, also to the adjacent islands. It is an important trading station to American merchants, so that regular communication with the United States by our own steamers is greatly desired.

#### PARA, BRAZIL.

This city, with a population of 42,000, is seventy-five miles above the mouth of the Amazon River. It is the greatest india-rubber depot in the world, which, added to Brazil-nuts, has given rise to an enormous export, and this only now in its infancy. The valley of the Amazon, undoubtedly the vastest and richest on the globe, will have a grand future that must, necessarily, in coming years, be of great importance to the United States. It then should be made, and can be made, our most desirable consumer. The value of its india-rubber product alone is already next to incalculable. The city of Para, only a few miles south of the equatorial line, and so near the mouth of the mighty river, with navigable feeders as far up as Bolivia and Peru, their best outlet to the eastern seaboard, is destined to become one of the greatest supply markets in South America. It is accessible by the largest ships, and has a deep and safe harbor. Its chief imports at present are machinery, dry goods, kerosene oil, breadstuffs, canned goods, boots and shoes, butter, rope, chains, and cutlery. Besides the exports already enumerated may be added a limited supply of cocoa, sarsaparilla, balsam of copaiba, and hides. At present there is a monthly consumption of about 6,000 barrels of United States flour at Para, which demand is constantly increasing.

#### MARANHAO.

This is the next important station on the Brazilian coast. It is a prosperous city of 32,000 souls, but it has a treacherous tidal harbor—a serious impediment which can never be remedied. Its exports are rice, sugar, hides, ginger, ipecacuanha, and a limited amount of cotton to England. Its imports are about as Para, though its harbor is so very objectionable it will receive no mails from ocean steamers, which do not enter it.

#### PERNAMBUCO.

This is also a tidal harbor, but comparatively safe and of easy access. Its population is 130,000 and one of the most energetic and thrifty communities in Brazil. It does a large business with the United States, and is a distributing point for many smaller Brazilian towns. Its climate is healthy. It exports sugar, rum, hides, dye-woods, and imports flour, lard, bacon, all kinds of breadstuffs, starch, kerosene oil, dry goods, cutlery, saddlery, salt, provisions, salt fish, silex, sugar-mill machinery, printed matter, medicines, books, plated ware, watches, canvas, oakum, rosin, fire-arms, paper, perfumery, all kinds of canned goods, lubricating oil, ink, bran, cars, car wheels and axles, glassware, drugs, soap, clocks, tinware, beer, blacking, lamp goods, matches, wheel-barrows, axes, candles, and fire-brick. It is really a great trading port. Its average consumption of flour per month from the United States is near 10,000 barrels.

#### MACEIO.

This little city of 17,000 inhabitants is nearly midway between Pernambuco and Bahia. It exports cotton to England, also sugar, hides,

rum, and ginger, and its present imports from the United States reach about 3,000 tons, with demands similar to those of Pernambuco, but in less degree.

#### BAHIA.

Bahia has a population of 140,000; is a very important point to the United States. Its exports are sugar, rum, coffee, cocoa, dye and fancy woods, hides, cigars, diamonds, and tapioca. Its imports are about the same as at Pernambuco. It is a very large consumer of United States flour.

#### RIO DE JANEIRO.

This famous coffee market stands within one of the grandest and safest harbors of the world. The most artistic brush cannot fairly portray it, or the most fertile imagination exaggerate its magnificence. It is a wonder of beauty among all the earth's most beautiful wonders. Its population is set down at 450,000. Its imports are about the same as Pernambuco, only in a much larger degree. Coffee, of course, is its greatest export, in extent by far the largest in the world, but it also exports on an extended scale, sugar, hides, horns, rice, rosewood, ipecacuanha, tapioca, diamonds, and gold. It has extensive graving-docks and foundries, and imports a great deal of heavy machinery from the United States. The monthly consumption of flour there fully reaches 40,000 barrels.

#### SANTOS AND MONTEVIDEO.

The former of these places is next to Rio in importance as a coffee market, and will in a few years more become one of the most important trading stations in South America. Montevideo stands at the mouth of the River Plate, and its commerce is doubtless already too well understood by the Department to be included in this review.

#### LA PLATA.

This place is embraced as one of the trading points of the River Plate, not so much on account of its present business status as for what it must surely become in the near future. Three years ago last November not a house stood on the ground where a beautiful city now flourishes with a population of 35,000. It is the capital of the province of Buenos Ayres, by far the largest and richest of all the Argentine States. At the cost of many millions, though situated nearly, if not quite, five miles from the river, it has already completed approaches and a harbor necessary for the accommodation of the largest class of ocean steamers. From this harbor several lines of railroads already in operation ramify almost every portion of the Republic. This new city, paved with granite and lighted with electricity, is one of the marvels of the age. Its public buildings are of grand proportions, and compare very favorably with the costliest structures of New York and London. Some of the foreign Governments have already established consulates there, and in view of its approaching commercial importance, I may before long appeal to our own to follow their example.

#### *Distances.*

	Miles.
From New York to St. Thomas .....	1, 428
Thence to Barbadoes .....	439½
Thence to Para .....	1, 141½
Thence to Maranhao .....	375

	Miles.
Thence to Pernambuco .....	780
Thence to Maceio .....	114
Thence to Bahia .....	273
Thence to Rio de Janeiro .....	745
Thence to Santos .....	212
Thence to Montevideo .....	828
Thence to La Plata .....	110
Thence to Buenos Ayres .....	25
Total .....	6,470½

*Production of coffee in Brazil (approximate).*

	Bags.
Rio de Janeiro district .....	3,500,000
Santos .....	2,000,000
Bahia .....	167,000
Total .....	5,667,000

## Imported of above into the United States:

	Bags.
New York .....	1,576,273
Baltimore .....	456,476
New Orleans .....	220,553
Galveston .....	42,547
Newport News .....	67,373
Savannah .....	17,774
Mobile .....	8,379
Richmond .....	6,183
All other points .....	5,547
Total .....	2,401,105

Approximate value, \$30,021,573.

The production of rubber in Para and its tributary Amazonian provinces is chiefly shipped at Para.

Annual total crop—approximate—27,515,150 pounds. Imported of above for manufacturing purposes into the United States in 1885—which may be reckoned as a fair average of the trade—13,379,976 pounds, valued at \$8,270,986. So it will be seen the United States imports amount to about 48 per cent. of the total product.

## TRADE BETWEEN BRAZIL AND THE UNITED STATES.

The estimated value of the Brazilian exports to the United States is very great—goat-skins, sugar, molasses, cinchona, dye-woods, cocoa, medicinal beans, fertilizers, hair, vegetable ivory, manufactured woods, drugs and chemicals, feathers, hats and hat materials, precious stones, carpet wool, clothing wool, and Brazil-nuts. Thus it happens that while Brazil exports to the United States products valued at something near \$50,000,000 annually, she imports of American goods only about \$8,000,000—a very barren and undesirable system of exchange.

## OUR TRADE WITH BRAZIL AND THE ARGENTINE REPUBLIC.

When the Congress of the United States attempted to cheapen the price of coffee to our people by the reduction of tariff duties the Government of Brazil at once followed up the opportunity with the imposition of an export tax, defeating, in a large measure, the benefits intended for the relief of the American consumer. Brazil sells her product to the United States, but buys her supplies chiefly of England, Portugal, Germany, and France. The fleet of merchant ships almost constantly in her harbor fully substantiate this statement. Why our merchants and

steamships should have so long and so persistently made Rio a terminal point with the great, rich, powerful Argentine Republic only 1,000 miles further on, with laws and institutions modeled after our own, destitute of coal for manufacturing purposes, essentially a pastoral country, with wool and hides, which we need, to give in exchange for our lumber, plows, wagons, locomotives, railway and tram cars, mowers, reapers, thrashers, wheat drills, corn-cultivators, stationary engines, buggies, carriages, manufactured woolen and cotton fabrics—the very best in the world—is something of an enigma.

As before stated, this country is willing and anxious to trade with us on a gigantic scale if the needed rapid, frequent, safe, and reliable avenues of communication in some way are opened to it. President Roca feels a deep interest in this subject. In a number of personal interviews he has indicated in very cordial terms the desire of his Government to sustain more intimate commercial relations with the United States. He warmly admires our country and is well advised about the capacity and superiority of its manufacturing industries. Though his Presidential term will terminate about the middle of next month, there is little room to doubt that Dr. Juarez, the new President elect, will inaugurate an administration in a large degree modeled after the wise and enduring policy of his far-seeing and public-spirited predecessor.

BAYLESS W. HANNA.

UNITED STATES CONSULATE GENERAL,  
*Buenos Ayres, September 25, 1886.*

*To his excellency the minister of the interior :*

Yarrow, Kett & Co., representatives of the company called "The United States and Brazil Mail Company," do respectfully present ourselves to your excellency, and state that the company we represent are desirous of establishing a line of steamers to run between Buenos Ayres and New York, and touching at intermediate ports, but, being an entirely new service, it requires the help of the national Government, wherefore we come to solicit from your excellency a subsidy, which we believe could be fixed in the sum of five thousand national gold dollars for each voyage made from New York to Buenos Ayres.

The ideas of the company, which we trust your excellency will favorably accept, are to establish a monthly line of steamers for the transport of cargo and passengers, extending, to that effect, the line which actually does the service between New York and Rio de Janeiro.

This service, which has hitherto been done with all regularity, has been established since the year 1882, there being employed three steamers, which would be increased with three more if the object for which we came to solicit the support of your excellency is realized.

We do not require to detain ourselves in extensive details in order to prove to your excellency the great benefits the Republic would attain through the establishment of this line, and which need has been felt for some time past. It is of public notoriety there is a large supply of goods manufactured in the United States, such as machinery and agricultural implements, railway equipments and material, &c., which by their quality and price can compete very favorably with those of European origin, but which can only be brought to this country in very limited quantities, or do not come at all, owing to the difficulties and expenses arising from the transshipment at Rio, or other ports of Brazil. On account of these difficulties arises the preference in all cases for the imports from the centers of European manufactures, even for these articles that the United States manufacture better and at a lower price. The consumer is thus surcharged with unnecessary expenses, and the actual difficulties of interchange with the northern Republic have arrived at such a state that there exist such articles as drugs, clothes, &c., which, although of American origin, are introduced by the European way—merely showing by this the great necessity there exists of direct communication.

For Argentine products the result is more convenient still, and presents itself as a saving medium for the cattle industry, which is subjected at present to a hard ordeal, owing to the low prices which wool and other products have in the European markets.

This direct route would not only open anew the American markets for our wool

and other products, but would perhaps serve as an initial movement by which the two Republics, duly estimating the convenience there would be for both in developing their commercial intercourse would, in a not far-off day, decidedly protect its development by customs laws which would wisely foment it.

Without having to wait till then, direct communication would have already produced its beneficial effects, improving the price and quality of many articles for the Argentine consumers and opening to our products new and important consuming markets, principally to the cattle industry, whose lot concerns the entire country so much, especially at the present moment.

The advantage proportioned to the people would redound to benefit to the exchequer, augmenting the imports and exports, and thus converting the subsidy we solicit into a highly productive capital.

The postal movement will also gain materially, facilitating by these means the commercial intercourse between both countries, and even the passenger traffic will become more important; thus allowing that the advantages the Republic offers to labor and foreign capital be better known.

We also beg to bring under your excellency's notice that this company which solicits the support of the Government offers reliable guarantees as to realizing its idea on the name and importance it has in the United States, and it does not present itself just to make a trial at the expense of the Government, but simply to extend the service it has established already, through a trial of many years, and which now comprises the greater part of the distance between Buenos Ayres and New York. The company can therefore assure your excellency that what it proposes to do will be accomplished.

YARROW, KETT & CO.,  
By GREEN & JOHNSON.

## AMERICAN GOODS IN SONNEBERG.

### REPORT OF CONSUL BISCHOFF.

That the imports from our country hither can and ought to be increased is a statement that admits of no doubt.

The question, however, is how to bring about this increase. I have given the subject a good deal of attention and study, and have also frequently conversed with intelligent business men here about it. My conclusion is that the desired end can be attained by the exhibition, in large towns and at the annual fairs, of samples of our articles, especially of agricultural machinery and other implements.

Mere advertisements and circulars will not do, and but seldom lead to the desired result here. Besides, there has arisen in some way a prejudice against American wares in Germany, from what reason I do not know. Our wares—for example, agricultural machinery—are, as far as I can see, as honestly and substantially made as the German wares, and generally in far more comely forms. If our manufacturers would humor the German farmer somewhat, and send him plows with handles much heavier than those used at home, and spades and hoes made in the same way, there would be some hope of our implements gaining a permanent foothold in the German markets, and the continued exhibition of our implements at central points and in the many industrial fairs of the country would help greatly towards the same end.

The German farmer is very conservative and eyes new tools and methods cautiously, but he is not a bigot nor a simpleton, and when convinced that a new implement is better than his old one he is willing to make the change. Wares to suit the nature of the country made with some regard to the tastes of the people, and continued and cheerful exhibition of the same, are methods which cannot fail to gain for our manufacturers a good and permanent market here.

OSCAR BISCHOFF,  
Consul.

UNITED STATES CONSULATE,  
Sonneberg, September 30, 1886.

## AMERICAN EXPORT TRADE.

[Translation.]

AMSTERDAM, October 1, 1886.

D. ECKSTEIN, Esq.,

*U. S. Consul at Amsterdam :*

SIR: I cheerfully comply with your wish and request to give you a statement of my views on the subject of "The American export trade of manufactured articles" in so far as my knowledge extends as regards articles the product of your country and the trade therein, as it has been and is in Holland, &c.

It may be now about twenty years ago when I first received a collection of samples of American goods, which were sent hither by a German house, established at New York, for the inspection of the firm here, with which I was then associated.

It could not properly be called a full or regular assortment; there was something of everything.

They consisted of a promiscuous lot of articles of jewelry, coarse and finer iron and steel ware, toys, leather goods, stationery, &c.

A great many of the specimens of these various classes of goods made a most favorable impression upon me.

I was quite surprised by the ingenuity and novelty of many of the articles, whose forms, constructions, &c., were until then unknown to me, and, altogether, many of the goods bore in high degree a truly foreign stamp.

There appeared to me to be a chance that could be turned to good account, and with the result of giving a large order.

My experience and consequent action in the matter was at about that time shared by others in this country, and as well, I may say, in other European countries.

Every one bought, and sales were rapid.

American goods were everywhere in demand, and whenever any peculiarly novel or practical article was exhibited for sale it was at once looked upon as of American origin, whether it was or not.

The introduction of American manufactures took place under most favorable auspices, and trade was open under circumstances extremely promising for the future.

On the whole it will seem to me that American manufacturers and exporters have no just cause to complain that the European importers and the trade generally has evinced any spirit of prejudice, or has not extended to them the same encouragement as, under similar circumstances, ever has been or is to others.

If the trade has not kept steadily on to grow and prosper, and if at this time your countrymen do not enjoy so large a share of the foreign trade in manufactured goods as they desire or expect, it is, in my humble opinion, owing in a great measure to causes of their own creation, and partly to circumstances beyond their control.

What I mean by this I will seek to explain and qualify to a certain extent by what follows, confining my remarks only to such goods as I understand and deal in or have dealt in:

Children's toys: These, especially the "Crandall's building toys," were easily introduced to the trade, soon became very popular, and still are among the articles for which there is a regular demand. The Reed Toy Company makes at present very desirable goods of this description.

The "mechanical toys" have met only indifferent success here, prices being generally too high and designs poor and uninviting. Then, the figures being generally as a rule stamped out of tin-plate, makes them more or less dangerous for children to play with.

Figures in wood have also been brought into the trade, but such as came under my notice were mostly extremely ugly and tastelessly finished. German manufacturers were, as ever, quickly on hand in imitating every novelty in this line of goods, and soon supplied the market with more tastefully finished articles at lower prices.

The American manufacturers would not listen, or remained deaf, to all representations and suggestions as to improvements in this direction.

However, good things are still produced in the way of alphabetical blocks and cubes. The lithographic pictures on them are usually attractive for children and the objects themselves strong and well made.

If the American manufacturers would furnish these goods with the fables and stories printed in the German and French text, the business in them would increase largely. The fables and fairy tales should, however, be more generally of foreign origin. Cast-iron toys, excepting only "money safes," never found much favor by the public here. They are considered to be generally clumsy, without being strong.

On the whole, there seems an extensive field here for the American manufacturers of toys, if they would comode themselves to turn out the goods more generally suitable to the taste of the public.

Good, serviceable tools are too high in price, and can but in few, if any, instances compete against the good and best makes imported from England.

The cheaper goods have been found to be so poor that they are hardly any longer salable.

It appears to me to be a great mistake, if not a folly, for industries anywhere to seek to overcome competition by lower offers for their products of so much inferior quality.

When American manufacturers brought out cast-iron axes, hatchets, and hammers that would fly to pieces as soon as put to anywise hard use, the business in them was speedily done with.

As for the rest, I can say that American cast-iron ware is, in most respects, superior to any I know of, and that many good models have been copied by English and French artificers, and find now ready markets.

In the so-called fantasy articles, "fancy goods," made of this material, the American product is not very attractive; they lack the artistic touch and elegance which make the French goods of this class so desirable.

But improvements in this particular are being made, and what seems most necessary is that American manufacturers realize the necessity of turning out such goods intended for export more in accordance with the taste prevailing in the countries where they expect to find a market for them.

Trunks, traveling-bags, and leather goods. The American share in this branch of the trade could be largely increased in Europe if the manufacturers would pay greater attention to the real and fancied wants and requirements of the public.

The large leather-covered wooden trunks for ladies, known as Saratoga trunks, would be greatly in demand if they were made a great deal lighter.

They should be made of a very tough, thin wood, and the mountings should be of steel or brass, instead of malleable iron.

The inner embellishments, made generally of striped paper in gay colors, or old fashion plates, should be avoided. The number of boxes, drawers, and compartments they usually contain, and which only increase the weight of trunks and make them more expensive, may safely be left out. There should be only two loose inside trays with an adjustable or movable compartment underneath for bonnets, and this would be sufficient.

The above remarks apply to a certain extent also to "solid leather trunks," in which a much larger business might be done if the foregoing and following hints were heeded.

Gentlemen here detest, and will not purchase and travel about with trunks stuck all over with gaudy pictures inside.

What, however, is of more importance is that so-called "solid leather trunks" be indeed "solid," and not, as is often the case, made in great part of pasteboard covered with thin leather of a poor quality.

The cheap paper-covered trunks I prefer to leave unnoticed. Cheap and bad is ever odious; the buyer makes only one trial.

The importation of and trade in American traveling bags is comparatively in its infancy, but capable of considerable development. The makers of them most chiefly have an eye to the necessity that inside furnishings comport, in every respect, with the exterior of the respective article; and that generally first-rate materials are used in their manufacture.

It is only a few days ago that I saw a very pretty American-made traveling bag with a really very fine frame and of an elegant shape, but O, horror! the inside of it was lined with very ordinary glazed cotton, having a border made of scarlet book-binder's calico; the whole ornamented with an inch-wide strip of paper, flowered, and in the center the half-nude bust of a "prima donna."

The manufacturer, in this case, had evidently taken pains to produce something admirable, but a simple and a strong lining of gray linen would have been more in place. Small leatherware, such as pocket-books, &c., have so far found no market here, and as it does not seem that there is at present any chance of their successful introduction and competition with the English and continental fabricates, I shall not go into any further details on the subject.

*Boots and shoes.*—I have always heard persons who have been to the United States speak highly of the boots and shoes purchased there.

But in so far as such goods have come under my notice, and this has been some years ago, rather extensively, they were of a very poor quality.

The uppers usually consisted of badly prepared leather; the soles of paper with a thin leather covering, and, in certain cases, they were lined with paper.

American boots and shoes soon came into disrepute, and trade therein stopped almost entirely.

It should also be mentioned that the styles (shapes) of the American boots and shoes



were invariably unlike to those in demand and indispensable to the trade in the markets of the Continent.

From what I know or hear of the resources that exist in your country, and of the ease and facility with which your countrymen generally avail themselves of them, it would seem to be in their own hands, that so far as the industry in question is concerned, to appear as successful competitors in the European markets.

But I think that before they will be enabled to offer to the trade here goods of the quality and styles suitable for our markets, they must examine and make a thorough study of boot and shoe making at such places as Paris and Vienna.

*Clocks and watches.*—The product of this American industry speaks, as it were, for itself; its high reputation is so generally and firmly established as to require no particular remarks or comments from me.

There is always a considerable and regular demand for the goods, which is most likely to be maintained.

The cause of this is, that the purchaser of an American clock or watch, whether low-priced or high-priced, gets the worth of his money or satisfaction.

I would mention, in this place, that of late great progress is being made by German manufacturers in the production of cheap nickel alarm clocks, &c., with lever movements.

*Bijoutery (jewelry).*—The American manufacturers in this branch of industry are going ahead in the right direction and supply the trade with many good and desirable articles.

Their imitation gold jewelry are really good goods and will in time, or as soon as they are turned out in greater variety in such styles as to suit the European taste, find a very much extended market.

In cuff-buttons, chains, lockets, &c., the trade, I believe, is already rather important, but brooches, earrings, &c., are more generally produced to suit the English taste, which on the Continent is but little admired, and where Paris and Vienna more generally lead the fashion.

*India-rubber goods.*—The trade therein is but limited, and particularly on account of the high prices of the goods, which if offered at more reasonable rates could be sold in far larger quantities, as the goods deserve and enjoy a high reputation.

*Electro-plated ware.*—In articles of electro-plate the American manufacturers furnish handsome things, and the intrinsic quality of the goods deserves a high rank. Many of the objects turned out are even artistically beautiful.

The prices, too, must be said to be moderate, and I am of opinion that the interested parties in this branch of American industry will in time to come, if they had in the past, no cause to complain, that the Europeans fail to appreciate the merits of their output and withhold their patronage.

*Furniture.*—In dining-room, bedroom, office furniture, &c., of American make a large business, I think, might be done here and elsewhere in Europe if the models or styles of the articles were generally more in keeping with the taste of people on this side, and the finishing off of the details or minor parts more carefully looked to.

The forms are usually too heavy or "clumsy" and angular, while table and chairs are always below the normal height of the articles as invariably in use here. This would seem to be a defect which could easily be remedied, but the calling of attention to it has hitherto failed to induce the manufacturers to pay any heed to it.

I feel satisfied that well-directed and unremitting efforts on the part of American furniture manufacturers would in time result in securing important markets for their ware in this and continental countries.

Our public is favorably inclined to the purchase and consumption of American goods. I even know that Vienna and Paris made furniture are being disposed of as of American make, and that considerable quantities of it are readily sold.

Knowing that there is no lack in your country of extensive and in every way amply supplied manufacturing establishments, abundance of skilled labor, as well as the desirable kinds of wood—the main factor—at low or fair prices, it would seem reasonable to assume that the matter of your manufacturers procuring a certain share of the trade in question is, to a goodly extent, in their own hands.

After submitting to you the foregoing statements respecting certain classes of goods, such as I feel more or less interested in, and in the trade of which I have many years' experience, I shall now, before closing this lengthy communication, touch upon a few other matters relating to and in regard to which changes or improvements are required, if the business intercourse between American manufacturers and exporters and European houses is desired to be extended.

(1) It is not only a mistake, but a blunder, at any time, to persuade or to try to prevail upon any importer to give larger orders or purchase greater quantities of any article than seems to him advisable or proper to do.

In cases where this occurs, and it has often happened, and the goods afterwards proved to be slow of sale or could not be disposed of, it creates mistrust and want of confidence in everything American, so to say.

(2) I also hold it to be a mistake that a majority of American houses will only sell for cash "against bills of lading."

Purchasers on a small scale for the retail trade prefer to let the business alone to paying for the goods before they have a chance to see them.

A credit of from one to three months, about such as your manufacturers and wholesalers extend to the home trade, would surely effect a large increase of their exports.

As to the character and financial responsibility of buyers, they could previously, in every case, manage to satisfy themselves.

American consuls almost everywhere have the best of opportunities to obtain information for them on this important point.

In this place and connection I would observe that I well know from experience that you American consuls are ever prepared and ready to foster and advance the commercial interests of your fellow-citizens to an extent unknown in the service of other nations, causing not a little envy to manufacturers and exporters in countries less favored in this respect.

(3) The establishment of sample exhibitions on a large scale at the principal trade centers would, it occurs to me, prove very beneficial. Those placed at the head or in charge of such institutions should possess every requisite qualification, should be paid good salaries, and receive, besides, a certain commission on all sales, &c.

Co-operation, collective action on the part of manufacturers and exporters, could easily perfect and carry out the scheme here suggested.

Many a purchaser who now buys German, English, or French goods, would, if the opportunity existed for making comparison, just as soon purchase the American article.

American firms which send out agents are hardly doing justice to themselves, inasmuch as they scarcely ever carry full assortments of samples, and those of whom they solicit orders have generally but a very imperfect impression made upon them respecting the actual and respective capacity of your American industries.

Again, the pursuance of this practice of getting or keeping trade by sending to us commercial travelers with samples must be enormously expensive, and must cause so much higher prices being asked for the goods.

I hope that by the above statements I have conveyed to you information which will be found of some value and use to American manufacturers and exporters, and it would afford me great pleasure if it should be instrumental in bringing articles into the market of recognized *taste, soundness, and solidity*, and at such *prices*, and on such *terms*, &c., as similar goods can elsewhere be procured. "Cheap and poor goods" must be shunned; our public here, like elsewhere, will pay good prices for good goods.

Only one other observation ere I close, and it is not at all the least important: Your manufacturers and merchants in the pursuit of foreign trade should not disdain to realize that there is yet many a thing to be learned from the people in Europe in similar occupations, and that if they would more often send young folks over here to perfect themselves in certain industrial pursuits and become familiar with and learn to appreciate certain of our tastes and wants, the results would be most solidary.

I am, with highest esteem, very truly, yours,

F. A. L. DE GRUYTER.

## INDUSTRIES OF GERMANY.

[Transmitted by Consul Bischoff, of Sonneberg. Translated from the Berliner Tageblatt, issue No. 536, under date of October 22, 1886, entitled "The Condition of Industry in Germany and Demand for Labor, according to the Reports of the German Factory Inspectors."] ]

One of the most important chapters in the extracts from the reports of the factory inspectors for the year 1885, published by the home department of the Imperial Office, is formed by the reports on the condition of industry and the demand for labor. These reports are of greater significance, since they confirm in general all that has been said in the reports of the chambers of commerce and of the foreign consuls, extracts from which we gave a short time since on the critical condition of industry. That these prevailing and unfavorable relations must cause a hurtful reaction on the material and social condition of the laboring classes would be naturally true, and the proof of it is found abundantly in this report of the factory inspectors.

One must indeed often read between the lines in order to get the truth, for there is no mistake that in the reports very curious twists are to be found, which were certainly used for the purpose of setting the above-mentioned relations in a more favorable light than they really deserve.

It is for this reason that many contradictions are found in the reports, which cannot be concealed. It must, therefore, always be borne in mind in reading these reports that they were edited by the home office, and naturally enough they would not

wish to send into the country from that office testimonials against the prevailing political economy.

The report on the condition of industry and the demand for labor, stated in general that, as in the previous year, so also in the year of the report, many opportunities of work were presented at reduced wages. While there are some districts where the statistics are more unfavorable, there are also some which show an improvement, especially for certain branches of industry. Further on it is started that in all the districts, with slight exceptions, the number of establishments as well as that of the laborers has increased, yet the increase of the laborers has been relatively smaller than that of trade. The reason lies in the growing endeavors of industry to displace hand-work by machinery. A result of this development is a constantly increasing crippling of the smaller business in comparison with the larger, especially, *e. g.*, of the hand-loom in the different branches of textile industry. Hand-work has also had to suffer much, because, as for instance, in articles for shoemakers, the wholesale manufacture is taking the place of the more moderate production by hand.

That the unfavorable condition of agriculture reacts directly on industry, particularly machine industry, is especially mentioned in some of the districts.

Indeed, it cannot be denied that the general condition of industry has been correctly sketched in the foregoing sentences, but how do the many opportunities for work, which are said to have been presented, agree with this? If the increase of laborers is not equal to that of business, if, in the development of industry, the tendency prevails to displace hand-work by machinery, and if the smaller establishments are thereby kept in the background in comparison with the larger ones, it is perfectly clear that the field in which human hands are demanded must become constantly narrower, and in that endless progression there must be a surplus of hand laborers. The above-mentioned many opportunities for work can then hardly be considered representative of the facts.

The reports appear to find consolation in the fact that the condition of industry is not everywhere altogether unfavorable, and in many cases had not at all reacted upon the condition of the laborers.

The manufacturers had often taken pains, at a great personal sacrifice, to keep the price of labor the same in spite of the unfavorable condition of business.

This practice of business men seems, in many instances, to be likely to cease. Among other things the following is stated in the report on the district of Merseburg-Erfurt: "Entire classes of laborers have not been affected by a reduction of wages, but both a diminution in the working hours and a reduction of wages of jobbers and contractors appear to be threatening in some branches of industry." We call attention here to the fact that a short time ago the same thing was mentioned in a paper on protective tariff as probable among the laborers in the Rhine-Westphalian coal industry.

It is worthy of mention that in the provinces where industry is the most developed these relations are the most unfavorable.

They write of the district of Dusseldorf thus: "The suspension of establishments of an important nature have not occurred, but the business was considerably less than in the foregoing year. In many establishments the number of laborers has been diminished, smaller jobs or holidays have been introduced, and here and there the wages have been lowered, so that the entire pay of the laboring classes seems to have been lessened." They say of Aix la Chapelle: "The number of laborers is somewhat lessened, but according to the report the diminution of industrial pursuits has been relatively larger than that of the number of laborers. The result of the diminution of industrial pursuits has been that in many establishments the number of working hours per day has been considerably reduced."

In the district of Leipzig the number of laborers has increased in spite of the unfavorable condition of industry. The report says: "In almost all branches of business there is complaint, to an increased extent, of overproduction, damaging competition, the low prices of the manufactures, and the consequent unsatisfactory profits of industrial enterprises. In connection with the reduction of the prices of raw materials, this caused the shortening of the time of work, the lowering of wages, partly also the discharge of laborers, and the suspension of entire establishments."

It would take too much space to give all that the reports on the unfavorable condition of industry contain. We will only further note that in the report from Thuringia there is complaint of the ruin of the textile industry. In other provinces in which the sugar industry is the most important, especially in the districts of Merseburg-Erfurt, Anhalt, and Brunswick, the continued unfavorable condition of that industry is reported, which naturally reacts on the laborers. Machine manufacturing is also thereby unfavorably influenced. As to the condition of mining, the report contains only what is unfavorable.

In the communications facts are brought in from districts to try to show a rise in industrial development. It cannot be denied that in some branches a brisk business

has been carried on, but it is only in those which do not form the foundation of the business life of Germany, but the less important branches of industry.

One would not go astray in asserting that the rise which is supposed to show itself in the increase of business and establishments in many districts is only apparent. It is correctly stated in the report on the district of Dresden: "In the year of the report the business establishments of the districts have again partly increased, partly become enlarged, but there is no mistake but that these increases must be regarded as the last endeavors to try to reach the profits of former years. There was an almost universal standstill, particularly at the end of the year, if not retrogression of the larger business establishments to be observed, which manifested itself mostly in diminishing the working hours.

The following observations of the factory inspectors of the district of Zivickau are characteristic of our industrial relations: "Since, with every to any extent favorable condition of business, attempts are made to enlarge existing establishments and to equip them with machines capable of a great amount of work, or to establish new factories by making use of the concessions made by machine manufactories, the production of goods must be increased above the usual demand."

Of the same import is the following report from the Black Forest district of Wurttemberg: "In all businesses it becomes more and more necessary to manufacture much in order to make any thing." This shows that the danger of a further overproduction is still imminent. The representations of the reports of the chambers of commerce of the unfavorable condition of industry have been officially changed in different ways and designated as coming for the most part from the chief opponents of the prevailing political economy. But it cannot be said of the factory inspectors that they placed themselves in opposition to the commercial views which maintain the right of restriction; exactly the opposite is to be recognized as true.

In spite of that they have entirely confirmed the reports of the chambers of commerce and been compelled to pass an unfavorable sentence on the new political economy.

## THE MANUFACTURE OF SILK IN CHINA.

### REPORT OF CONSUL SMITHERS.

I addressed a series of questions to an American firm at this port who are proprietors of a silk filature, employing improved machinery and using Chinese workmen under foreign supervision.

The questions and the answers obtained are as follows:

(1) What is the area of land, in square feet, and its present cost value, and what is the value of the buildings upon it now occupied by you for manufacturing purposes?

Answer. Area of land 45,000 square feet, or 6½ mow; value of land, 7,000 taels\* (\$7,700); value of buildings thereon, 30,000 taels (\$33,000).

(2) What is the area in square feet of floor surfaces in actual use and cost of same per square foot, based upon the cost of building?

Answer. Area of floor surfaces in use, 22,000 square feet.

(3) What kinds of machinery are used? Name varieties, and state if all are self-acting or otherwise.

Answer. Machinery consists of 256 reels and 384 basins for preparing cocoons.

(4) What is the present cost price or value of all the machinery you employ, including boilers, engines, shafting, tools, &c.?

Answer. Cost price of machinery, 35,000 taels (\$38,500).

(5) What kind of power is used to run your filature, and what is the horse-power capacity?

Answer. The filature is run by a four horse-power steam-engine, and is supplied with steam by three boilers.

(6) What is the cost price of coal delivered at your filature?

Answer. Price of coal from taels 4 to 5.50 taels (\$4.40 to \$6.05) per ton, according to quality.

(7) What amount is paid annually for taxes?

Answer. The Government ground-rent and the municipal taxes amount together to 200 taels (\$220) per annum.

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\*The Shanghai tael is equivalent to \$1.10, United States gold.

(8) Are there any other expenses entering into the cost of production, such as insurance, depreciation of plant, interest, &c.? If so, please state the items and amounts.

Answer. Additional expenses are: Insurance, 1,000 taels (\$1,100); depreciation, at 10 per cent., 8,000 taels (\$8,800); and interest, 7,000 taels (\$7,700).

(9) What returns on capital invested do you regard satisfactory?

Answer. We regard 10 per cent. net per annum as a satisfactory return on capital invested.

(10) What is the total amount of your production for a stated period, say one week or one year?

Answer. Total annual production, 345 piculs, or 46,000 pounds, of filature raw silk from 1,800 piculs of dry cocoons.

(11) What is the total number of persons employed about your filature, exclusive of administration?

Answer. Number of hands employed, 650.

(12) What number of hours per week are your employes required to work, and what is the total average amount of weekly wages paid to them?

Answer. Employes work ten (10) hours a day and earn Mexican \$4½ to \$5 per month—(U. S. gold dollar, say 4, to 4½).

(13) What is the average price that you pay for cocoons delivered at your filature?

Answer. Average price of cocoons, taels 70 to 90 taels per picul—(13½ pounds average)—(\$80 to \$100).

(14) Starting with the cocoons in the condition you purchase them, and, with your process of manufacture, what is the percentage of waste?

Answer. Percentage of waste, in course of manufacture, 80 per cent.

(15) What is the prevailing rate of interest paid by entirely responsible firms in Shanghai for the use of money?

Answer. Prevailing rate of interest, 7 to 8 per cent.

#### COST OF LIVING AMONG OPERATIVES.

It is well known that the Chinese live very cheaply, their chief article of food being rice. Various reports have been made on this point, and I have not deemed it necessary to detail the living expenses of Chinese operatives.

The amount named in answer No. 12 is not in excess of what is earned by ordinary laborers in Shanghai. A large number of women are employed in this filature at very low wages, which accounts for the low average given.

#### HAND-MADE FABRICS.

For the purpose of obtaining reliable information relating to the elements entering into the cost of production of silk made on hand looms, I instructed Mr. Emens, the interpreter of this consulate-general, to proceed to Hangchow and Soochow, two centers for this industry, and the following data relate to one of the many hundreds of similar establishments in Hangchow, where silk fabrics are woven in dwellings. In some cases three or four looms are manipulated by the various members of a single family.

#### BUILDING.

The building is of one story, wooden frame, and concrete walls; earth floor on a level with the street; the roof is made of tiles.

There is a single room 15 feet by 20 feet. Light is admitted by removing wooden shutters at the back of the weavers and through windows composed of translucent shell parings. No attempt is made to moderate the temperature of winter. The room contains three wooden looms. The weaver sits in a hole scooped out so as to place him on the proper level to manipulate the shuttle. This house is on a side street, away from any thoroughfare, where rent would likely be higher.

*Items of expense and cost.*

Value of land house stands on.....	\$10 00
Value of house when new; cost to build.....	25 00
House contains 3 looms; cost when new \$50 each.....	150 00
<b>Total cost of establishment.....</b>	<b>185 00</b>
Rent 50 cents per month; per year.....	6 00
Cost of maintaining 6 workmen per year, at rate of \$2 per month each.....	144 00
Annual production, 4,500 feet. Wages paid to workmen, at rate of 3 cents per foot.....	135 00
Estimated repairs needed in one year.....	12 00
	<b>297 00</b>
Owner receives for year's production, 4,500 feet, at 8 cents per foot.....	<b>360 00</b>
His net profit is thus.....	<b>63 00</b>

It is usual for the loom-owner to work a loom himself.

The weavers eat and sleep at the side of their looms. No regular hours for working are observed. If business is good the looms are kept going as many hours as there is daylight.

It is in these wretched dwellings that the beautiful silk for which China is famous is woven; and it is a common sight to see chickens, ducks, and pigs scratching about under looms on which rest delicately tinted silk and satin fabrics.

In some instances the loom-owner is able to buy the spun silk and weave it on his own account. Generally, however, he weaves it for the merchant by the foot.

Velvet for the imperial court is manufactured at Nanking upon official looms. Equally good velvet is made in dwellings similar to the example given, and will compare with the finest European production in quality; and the cost to manufacture, as I have been informed at the looms, is much less.

At Soochow Mr. Emens found the same system of weaving in vogue as in Hangchow.

Silk manufacturing throughout this section of China was brought almost to a stand-still during the last great rebellion.

The number of looms at Soochow, estimated before the rebellion at 12,000, is now reduced to 5,500, and many of these do not work the year round. The demand for raw silk for exportation has stimulated its production, which is now said to be greater than it ever was.

E. J. SMITHERS,  
Consul

**SILK CULTURE IN INDIA.***REPORT OF CONSUL WIGFALL.*

The following information is derived from an address by Mr. Thomas Wardle, a silk dyer and printer of Staffordshire, on Indian silk:

It has been thought not only to be within the power of the Government but that it will be an easy task for it to revive and vastly extend the cultivation of silk in India.

A recent pamphlet by Mr. L. Liotard of the finance and commerce department, Calcutta, shows the exports from Bengal by sea to other countries of raw silk, waste silk, and cocoons to have decreased from

(nearly) £2,500,000 (\$12,166,250) in 1868-'69, to £935,000 (\$4,791,502.50) in 1885-'86. The gravest apprehensions indeed have been felt by reason of this so serious decline. To account for it there are many explanations. By some it is attributed to the lower prices in European markets, resulting from increased supply; to changes of fashion, which have substituted cheaper fabrics; to the much larger use of waste silk for plushes, &c.; and, finally, to the increased use of Tussar silk. Others again believe that the Bengal sericulture is suffering from disease among the worms, from climatic causes resulting in their degeneration, from a bad system of rearing them, and from a still worse method of reeling the silk from the cocoons.

Mr. Wardle himself regards the decreased use of Bengal silk as solely owing to its defective quality. He thinks the introduction of Tussar has nothing to do with the question, as it is certain that coincidentally with the decline in Bengal silk China and Japan textures have found favor in Europe through their superior quality, and at very high prices.

Mr. Wardle states that "from lengthened microscopical examinations of Bengal silk" he has convinced himself that there is no fault in the fiber, which "compares favorably with Italian silk," and that "of the two the Bengal article is indeed to be preferred if produced by well-nourished worms and properly reeled."

As tending to account for the Bengal difficulty, it is said that the Bengal worm produces much less silk than the Italian.

#### FOOD OF THE WORM, AND LAND-RENTS.

The mulberry leaf, which is the worm's food, contains five substances: (1) solid fiber; (2) coloring matter; (3) water; (4) saccharine; (5) resinous matter. The first three of these may be called non-nutritive. The saccharine matter nourishes the insect, and the resinous, solidifying on contact with the air, forms the silk. Thus the leaf becomes the measure of the silk in quantity and in quality as well. With the low land-rents and careful cultivation of Italy the mulberry leaf yield is large and full of sugar. In Bengal, on the contrary, rents are excessive. Mr. Wardle says that previous to the recent war between the States in America the rent of mulberry lands in Bengal was at the rate of about two rupees (the rupee is now worth about 35 cents Federal currency; it was then worth probably about ten cents more) per bigha, which is the third of an English acre. This rate would have been about \$2.75 per acre. During that war, however, and the prosperous years in India which succeeded it, rents rose to as high as 16 rupees per bigha, or 48 rupees per English acre (say, \$22 per acre). And now it seems that rather than lower their rents the Indian land-owners prefer to let their lands lie idle. At least such is the view presented by Mr. Wardle, who speaks from personal investigation, and who is of such authority that, so long ago as 1872, Lord Salisbury, then secretary of state for India, applied for his advice as to the dyeing of India silks in India, while also requesting him to go out to that country to examine the native dyes. This examination, it may be added, following Mr. Wardle's statement at Calcutta, required eight years to complete.

As a result of the extortionate rents referred to, the Indian silk-worms are not provided with proper nutrition as regards quantity. The quality, too, is said to be poor and lacking in sugar. The silk produced is as good in fiber as that of Lombardy, but it falls short in amount, and, from the weakness of the worms, is full of what are called

knibs or blotches, which impair its market value. The glutinous or resinous matter discharged by the worm, and which becomes solid by contact with the air, issues through two orifices close to his mouth. This double fiber becomes a single thread by the cohesion of the two strands as the worm spins his cocoon. If this action is interrupted through the weakness of the insect, the fibers are liable to loop and club up, making the knibs or blotches spoken of.

Mr. Liotard does not contend that lowering the rents would in itself revive the industry; but he thinks it would be of service in that direction.

The natives engaged in silk-raising in India are said to be numbered by millions, while the land is considered to be the best in the world for the purpose. Other things being equal, a varied industry has many advantages, and there would seem to be no valid ground, on the score of climate at all events, why many of our States should not be able to profitably take up sericulture. At the rate of rent suggested by the eminent authority quoted, viz, \$22 per English acre, or anything approaching even to that price, the element of rent would certainly be much in favor of the United States.

F. H. WIGFALL,  
*Consul.*

LEEDS, *April 29, 1886.*

## LABOR IN EUROPE, AND AGRICULTURE IN DENMARK.

REPORT OF CONSUL RYDER, OF COPENHAGEN.

### LABOR IN EUROPE.

The information to be obtained from this Kingdom must be of exceedingly meager description when placed by the side of reports from the great manufacturing and industrial centers of Germany, France, &c., taking specially into consideration that close upon two-thirds of the population of this country are engaged in purely agricultural or maritime pursuits; that no mines for coal or other minerals are to be found in the Kingdom, neither are there any smelting furnaces for the reduction of iron or other ores; no factories of animal or vegetable fibers, and only a few textile fabrics of limited dimensions.

Two very good reasons may perhaps be offered why England has heretofore been (and still to a large extent is) able to compete with the world at large in the manufacture of nearly all kinds of machinery.

(1) The raw materials of iron and coal being obtainable in England in such quantities and at comparatively small cost, naturally gives the English manufacturer a great advantage over his competitors in other countries, where these articles are only to be had by importation.

(2) That England, thanks to the low cost of the raw materials, together with a cheaper money market for the required supply of vested capital and working expenses, and aided also by the natural energy and mechanical tendencies of the people, has had a long start of other nations. And we all know that when an individual or a nation has once made a place for himself or itself and got well established therein, it is a hard struggle for others to compete against such odds. To the second reason brought forward, it may with good grounds be retorted, that it is only a question of time for other nations to be upon England's



heels, and I think it will have to be admitted that the latter statement is yearly, I might say daily, having evidences of its truth, inasmuch as some of the continental nations are now able to compete successfully in the open market with England for many articles of manufacture connected with iron and steel, for which England, until recent years, might be said to have had a monopoly, so far at least as legitimate competition was concerned.

In support of these views I will now give the observations made to me, and information supplied by one of the partners for extensive iron-steamship building and engine and boiler making works in this city.

This party truly remarks that when one looks below the surface and sees how nations that are so heavily weighted in the race through the enhanced prices of minerals and coal, can, under such circumstances, compete successfully with England, the first thing that strikes one forcibly is the greatest difference in the hours of work as well as in wages in Germany, France, and other countries as compared with the amount paid in England to the same classes of workmen; and where, in the majority of them, as is well known, these wages are less than half of which is paid in England. And to elucidate this more clearly he observes that in the construction, for example, of a mill engine, if the material bears to the whole cost of the machine the ratio of 2.3, with wages to the latter in the ratio of 1.3 (say in an English-made machine), then for a similar engine made on the Continent, if the materials cost even 20 per cent. more than in England, and the wages cost only one half, the continental firm would then have the advantage.

This, however, as he says, brings us to the other point, and that is the amount of work turned out by the average continental artisan as compared with his English compeers; that is to say, how much have each to get for doing the same piece of work.

So far as his experience goes, principally of course in his own line of business, the average amount of work done by the continental workmen does not equal that by similar classes of English workmen in the same given time, although he has seen in various departments of skilled artisan labor not a few instances of workmen who as regards physical endurance, could fully hold their own with their English brethren; but, as before said, taking the average, this is not the case. This he attributes to two causes:

(1) The early training that most of the artisan classes get in England better fits them for undergoing steadily a heavy physical endurance without overstraining.

(2) That the style of living and the quality of food have a paramount influence upon the amount of work a man can undergo, and that, as a rule, the English workman consumes much more animal food and altogether lives better than the continental workman; and these two points, he is of opinion has more to do with the matter than the mere question of skill or innate mechanical tendencies, but at the same time it should be remarked that a steady visible improvement is to be noticed as yearly taking place in the physical endurance and skill of the continental workman, whilst his English colleagues, speaking comparatively, would seem to be remaining stationary.

Following out the foregoing observations, this party informs me that even in this country, for example in his own works, where the whole of the coal, iron, steel, copper, &c., iron and steel material (plates and bars) for ship-building and boiler making have to be imported from England or Sweden, and, whether in the raw or manufactured state, is subject to import dues, which, together with freight, &c., adds all depending upon

the class of material from 10 per cent. to 20 per cent. on the original cost; that notwithstanding this their firm can build ordinary engines as cheaply as in England, and even in a majority of cases (to please their customers) put more labor upon them. This, he adds, affords conclusive proof that not only the rates of wages are much less than in England, but that the cost of a piece of work for labor is also considerably less than in England.

As regards paragraph 4 in the circular (textile fabrics), I have now the honor to submit the following categorical replies to the different questions therein contained, as supplied to me by the owners of a mill in the production of the coarser, medium, and less fine classes of broad-cloth, these, I am informed, being solely intended to supplement the demands of home consumption (which still continues to be largely supplied by imports from England and Germany), and that the produce of this mill, as with the few others existing in the kingdom, is in no wise for exportation:

*Plant and production of cloth-mill.*

The area of land is 20,000 square feet; the cost, \$16,000.

- (1) The cost of the buildings, \$32,000.
- (2) The floor surface is of 300 square feet, at the cost price of \$10.50 square foot.
- (3) Of machinery in use, are carding, spinning, rolling, cutting and pressing machines, looms, &c., the whole driven by steam power.
- (4) Of carding machines, 12 sets are in use.
- (5) Of the width of 48 inches.
- (6) Seven spinning mules are in use.
- (7) The number of spindles amounting to 1,932.
- (8) There are 25 looms (from Hartman & Schörrherr, of Chemnitz, Saxony).
- (9) In addition to the harness of the steam-engine, each separate machine has its own harness.
- (10) The width varying from 2 to 12 inches.
- (11) The cost value of all the machinery employed is \$40,000.
- (12) The mill is worked with 1 steam-engine of 20 horse-power.
- (13) Cost of coal at the factory, \$5 per ton.
- (14) Annual amount paid for taxes on the land, buildings, and machinery together is \$80.
- (15) Insurance on buildings and machinery is \$320; 4 per cent. is yearly written off on the buildings and 6 per cent. on the machinery.
- (16) Ten to 15 per cent. return on capital invested.
- (17) Average annual production is of C<sup>11</sup> 100,000 to 110,000 meters and the market value at the factory may be placed at \$800 per 1,000 meters.
- (18) Number of work people employed, from 90 to 100.
- (19) The established time of work is 72 hours per week, the average wages being \$3 per week exclusive of foremen, who receive from \$6.75 to \$10.50 per week.

AGRICULTURE IN DENMARK.

The present crisis in agriculture and its effects on the value of landed property in this Kingdom may be said to form one of the vital questions of the day. The great decline which has taken place in the last few years in the prices of all descriptions of cereals, the depression in other agricultural branches, and the consequent depreciation in the value of landed property, are now directing public attention in Europe to seek for some remedial measures to assist in alleviating this present pressure.

Whilst this agricultural depression would appear to be most keenly felt in Great Britain, Germany, and France, it must fortunately be acknowledged as regards this country that although the abnormally low prices of grain have unquestionably affected the interests of the Danish husbandman, nevertheless, thanks to the great development of late years in their live stock and dairy branches, they find themselves in a

far better position to meet the present adverse circumstances than the agricultural classes of before-named countries.

In estimating the value of landed property it is scarcely possible to lay down a hard and fast rule, inasmuch as so many foreign elements, operating in a commercial point of view in each separate case, have to be taken into consideration; for example, a site by nature of pleasing aspect, with good shooting or fishing advantages, a well laid-out garden or park grounds, good or indifferent main roads, proximity to a railway station, &c., all which points will naturally call for distinct estimates on the part of an intended purchaser.

Leaving, therefore, all such estimates of these foreign elements out of account, I shall confine myself to the remarks and figures lately published in the agricultural magazines of this country, where these estimates are made to rest mainly on the net average yearly income the property may be estimated to yield. The capability of giving such net income is dependent upon—

(1) The quality of the land (therein included the sloping state of the land's surface).

(2) The existing state of culture of the land.

(3) The situation of the property with respect to the facilities for removing the produce.

(4) The position of the land in relation to the buildings.

(5) The durability, sufficiency, and appropriate arrangements of the out-buildings. In order to arrive at a correct valuation of such property it is deemed most advisable to base the estimate upon the fold yield of the various lots of ground. For this purpose it is assumed that there are three classes of farms of very different soils but worked in other respects under similar conditions.

No. 1, with excellent land, which, under good treatment, can be calculated to give, besides the seed corn, an average yield of 16 fold. —

No. 2, with medium good land, which, with same treatment, in addition to seed, may be calculated to return a yield of 12 fold.

No. 3, with poor land, calculated to give a return of 8 fold, in addition to the seed. Taking a drift of 7 fields (of 1 barrel of land each =  $1\frac{1}{2}$  acre), divided into 4 fields of grain, 2 fields of grass, and 1 of naked fallow, and fixing the prices of wheat at \$4.28 per barrel, of rye at \$3.22 per barrel, of barley \$3.22 per barrel, of oats \$1.15 per barrel, and of vetches \$2.15 per barrel, the gross receipts for the 7 barrels will be found to be:

#### No. 1.

Wheat, 16 barrels .....	\$68 50
Barley, 16 barrels .....	51 50
Oats, 16 barrels .....	34 30
Vetches, 16 barrels .....	34 30
Two barrels of land in grass .....	37 50
Seven barrels of land .....	226 10

#### No. 2.

Wheat, 6 barrels .....	25 70
Rye, 6 barrels .....	19 30
Barley, 12 barrels .....	33 60
Oats, 12 barrels .....	25 75
Vetches, 12 barrels .....	25 75
Two barrels land in grass .....	37 50
Seven barrels of land .....	172 60

No. 3.

Rye, 8 barrels.....	\$25 70
Barley, 8 barrels.....	25 70
Oats, 8 barrels.....	17 20
Vetches, 8 barrels.....	17 20
Two barrels land in grass.....	26 80
Seven barrels of land.....	112 60

Preceding next on the basis that the working expenses may be calculated at \$13.40 for 1 barrel of land of grain, \$4 per 1 barrel land of grass, the working expenses of 7 barrels of land will be, for No. 1 of \$75; taking the yield into account, for No. 2, \$69.60, and of No. 3, \$64.30. Further, the amounts for taxes and titles, which are fixed charges on each separate property, for the purpose of completing these calculations, have to be estimated for the 7 barrels of land, as follows: For No. 1, \$18.50; for No. 2, \$10.80; and for No. 3, \$5.40.

	No. 1.	No. 2.	No. 3.
Receipts for 7 barrels land, respectively.....	\$226 10	\$172 60	\$112 60
Expenses, areal.....	93 50	80 40	69 70
Income.....	132 60	92 20	42 90
Income per barrel land.....	18 94	13 17	6 13
From which may be further deducted, with unforeseen expenses, per barrel of land.....	1 44	1 17	1 13
Leaving net income of.....	17 50	12 00	5 00

Although great difference of opinion exists as to what return an owner should receive on the capital invested in his landed property, it has been thought best to capitalize the foregoing figures at the rate of 5 per cent., according to which the value per barrel of land ( $1\frac{1}{2}$ ths of an acre) would be, respectively, \$350, \$240, \$100, of which estimates the second is that which is said to respond most closely to the prices that have been paid here in the last year for land. It should, however, be observed that even at the present day the poorer sorts of land have been sold at higher prices, whilst the best lands have only in very exceptional cases exceeded the estimates quoted. In the above-mentioned calculation of values it is understood that complete and good buildings, the most modern agricultural implements and machines, complete and good breeds of stock, go with the land, and the land itself is well drained. Wherever any of these conditions may be found wanting a proportional reduction must be made from the estimates.

Taking the value of the buildings at about one-fourth of the aggregate value of the property, and that of the live stock at one-eighth of the same, the value of the land by itself may be respectively estimated at \$217, \$150, \$60. Although the foregoing estimates may perhaps have been drawn up in somewhat too favorable a form, and, whilst from the general distrust prevailing in all circles at the present day, much more caution is undoubtedly to be noticed on the part of buyers of such class of property, it would still seem to be the decided opinion that so far no preceptible depreciation in the value of landed property (especially of the better kinds) has shown itself in this country.

It is no doubt a fact that of late many forced sales have taken place, where the prices obtained were not more than one-half of the original cost; but on closer investigation of all such sales it will be seen that the properties in question were originally bought by parties with insufficient capital, who were compelled to mortgage the same heavily in order to complete the purchase money, and that during the last adverse sea-

sons, together with the low grain prices, these parties, in order to meet the interest due to the mortgage holders, as well as to obtain needful funds for working expenses, have allowed the buildings and inventory to fall sadly out of repair, to reduce the numbers of their live stock, to leave the land in a state of impoverishment through insufficiency of manures, proper draining, and altogether lack of careful treatment.

At the same time I cannot but think that some dark spots in the horizon are to be viewed with anxiety by the Danish land owners.

The agricultural classes in this country may be said, if I may be allowed to use the expression, to be carrying their eggs all in one basket; in other words, they are entirely depending upon the markets of Great Britain as the main outlet for their large exports of live stock dairy produce.

Any depression or sensible decline of prices in those markets is immediately reflected back upon the markets of this kingdom, and the following important factors in the downward movement of prices must be watched with considerable anxiety by all connected with these exports.

(1) The steadily increasing supplies of frozen meat from the Australian colonies and elsewhere upon the English markets.

(2) The contraction to be observed in the purchasing powers of the working classes in England under the present severe depression in the manufacturing, mining, and ship-building industries.

Should these two prominent features in the trade prove to be of more permanent character, Danish land-owners must then, I fear, prepare themselves for the certainty that a depreciation in the value of their property will also be painfully realized by them in the near future.

#### TWO METHODS OF FARMING.

It is well known that whilst on the virgin soils of the great Western States of the United States of America 5 barrels (20 bushels) of wheat can be raised on a Danish barrel measure of land ( $1\frac{1}{2}$  acres), at a cost of \$12 per barrel of land for working expenses, together with ground-rent, that on the other hand, in South Hanover, as well as on the best wheat lands of this Kingdom, with a yield of barrels (44 bushels), the cost of working expenses, together with ground rent, will amount to \$55 per barrel of land. Here is at once seen the difference between the drift of the lowest price land with that of the relatively dear one, and between agriculture carried on at the lowest working cost and agriculture with high attendant expenses.

Between these two extremes there will again be found nearly as many various degrees as there are of different branches of agriculture, and a learned professor of agricultural economy has very forcibly set up the following dictum with respect to the working expenses in their relation to the nature and value of the land, namely, that the more one expends upon an acre of land within such limits as are needful for the obtaining of the highest possible net returns which a sound economy will admit of, by so much the less will the outlay for each barrel or hundredweight that may be harvested per acre be. This axiom may be said to hold good in all cases, and must be understood in this manner: that it is in proportion to the outlays for ground-rent, working expenses, and manures that the highest net yield has to be brought out of agriculture, and that this applies with equal force to intensive drift with small employment of capital and small gross yield, as well as to the intensive drift with the employment of large capital and with large gross yields.

It is evident that where the costs of cultivation reach beyond an amount of \$50 per acre the improvement of the soil must be intensive

in comparison with the agriculture where the working expenses only come up to one-fifth of that amount.

It is, however, at the same time well worthy of notice that whilst in this Kingdom one barrel of wheat can be produced on one-eleventh barrel of land, whereas one-fifth of a barrel of land is required in the western districts of the United States of America to obtain the same yield, that, nevertheless, wheat cultivation is for all that carried on with more profitable results in the United States than in this Kingdom.

It is the opinion in this country that the exhaustive system so generally carried on at present by the farmers of these virgin soils in our Western States bears a great resemblance to the mode of treatment pursued by their own forefathers, who, without making any returns to the soil, but contenting themselves with giving it ample rest, chiefly directed their attention to the reaping as much as possible out of half of the area cultivated. This is a system which may be considered as judicious, so long as the land can be obtained at its present low cost, and so long as the working expenses can be kept at a low rate through a lenient use of the land; but that, in the same proportion as the cost of the land may be raised, so surely will it be found necessary to abandon this system and to employ an increased outlay per acre in its cultivation.

#### COST OF PRODUCTION.

On examination of the conditions to which any party entering into possession of a farm may be amenable, it will naturally be first asked, What is the rent of the land and what taxes are levied thereon? In what proportions are such charges to the average yield that may be expected from each acre of land? The higher the rent and the higher the average rate of yield, then the employment of so much larger amount of working outlays will unquestionably be the most judicious course of sound economy.

On the basis of these two factors, rent and average yield per acre, the system of the proper management of the land will have to be laid, whether it would be most advisable to pursue an intensive or an extensive system of culture. In many districts of this Kingdom, and in many branches of agricultural pursuits, the conditions are such that agriculture is considered most benefited by following that which may be said to approach nearest to the extensive system, namely, a limited use of working capital, a naked fallow, several years grass land, and a moderate rotation of grain crops. In other districts it is found more advantageous to follow a more intensive use of the land, with a larger employment of working capital, but in order that the extensive system, which is so much dependent upon a lenient use of the soil, may meet with satisfactory results, the land should be of low cost. A high rent can only be afforded when the average yield can be reckoned upon with some surety. When all the conditions for carrying out an intensive use of the soil are to be found, the question will then present itself how far the rent of the land may be raised, through improvements called for in order to yield successful results. It is not the largest gross yield, but rather the highest net returns for the amount of capital employed which must be the aim of agriculture, as they are in any other commercial undertaking. Each branch of agriculture, on the basis of the given assumption, will require a different degree of intensity. Even in the circumscribed boundaries of this Kingdom there will be found spots where the intensive system will be the most remunerative, whilst there will again be conditions which will make it most advantageous to

employ an intensive system of culture of the soil. These conditions must be largely influenced by the position occupied by the farmer, whether, for example, he is owner or tenant of the land, unless there be a special arrangement that the necessary works for the intensive system shall be undertaken at the expense of the owner of the land; or else, as is now the case in England, that the tenant at the expiration of his lease should receive full compensation for the improvements he has made.

#### USE OF LAND.

The statistical tables show that in every 8 fields, as nearly as possible, the land is employed in the following manner, namely, 1 field with winter-sown seed, 3 with spring seeds, 3 of clover and grass, and about four-fifths of a field in fallow.

In the best districts of the country and on the most fertile soils and where the wildest climate prevails, winter seed and fallow areas are the most prominent, the corn area occupying more than half of the land. In the less favorably situated corn districts it is the reverse. Here the winter seed and fallow area are of less importance, the corn area being much below the half of the land and the gray fields being frequently of more than three years' duration. There have been good grounds for this special course of operations in the different districts of the Kingdom, and it is felt that no greater mistake could be made in the interests of the country's agriculture than at any time to omit to pay proper regard to this special development, which has been the result of practical knowledge obtained in the course of years. On the other hand, one must not either be blind to the fact that many of the old-fashioned modes of drift might with advantage be exchanged for more modern ideas by degrees as development goes on advancing. First and foremost, it is in respect to the best and most fertile soils that this question of more intensive employment of the land must impress itself most forcibly.

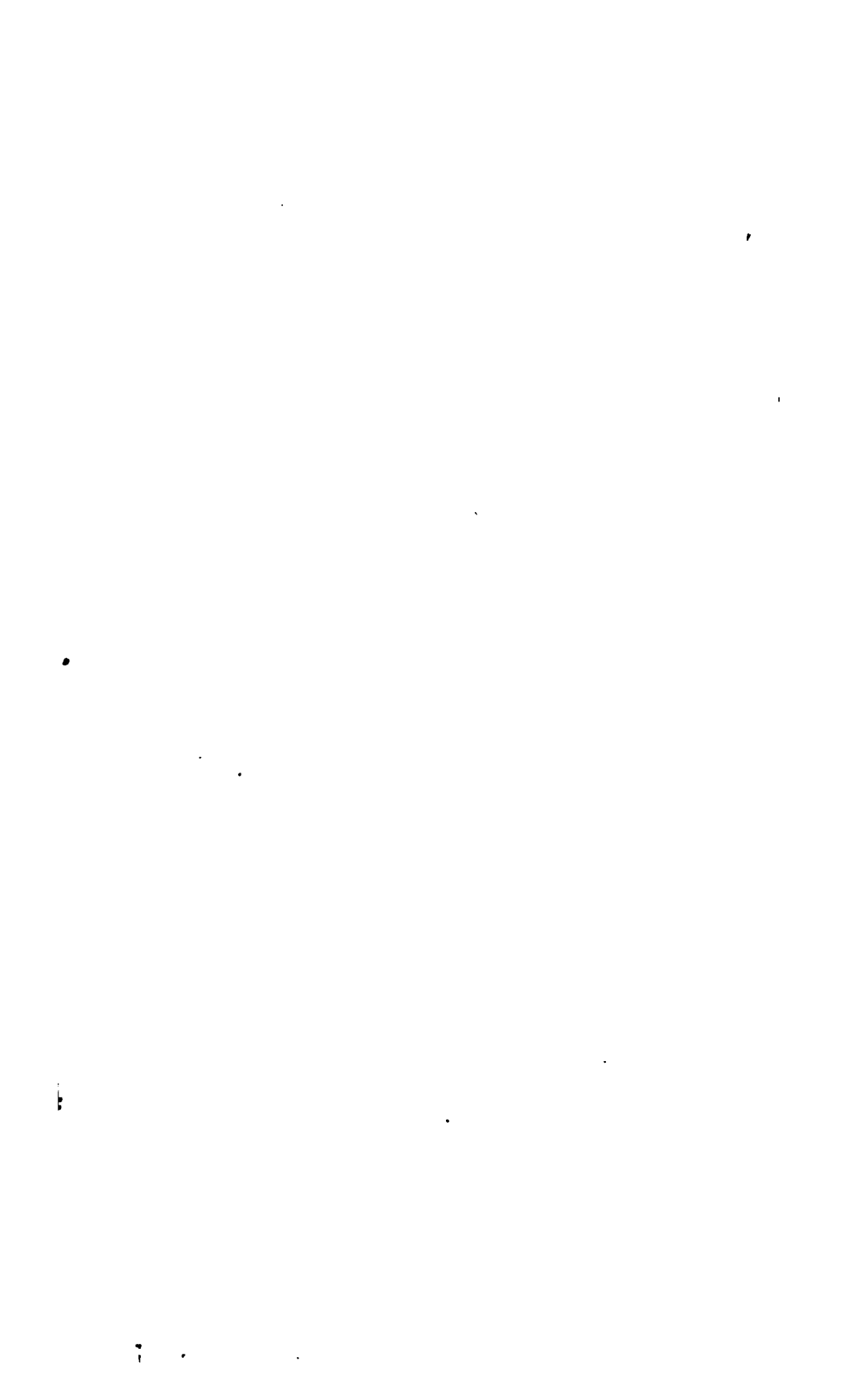
It is here that the greatest extent of unemployed fallow land is to be met with, notwithstanding that it is here where the land is highest in price, and where the average fold return is largest.

From one sixteenth to one seventeenth of the arable land in Maribo district (one of the most noted for its clean, good wheat soil) in the year 1881 was sown with winter seed, whilst nearly the same amount of land was laid under naked fallow.

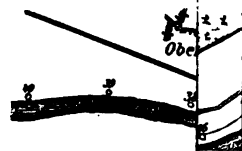
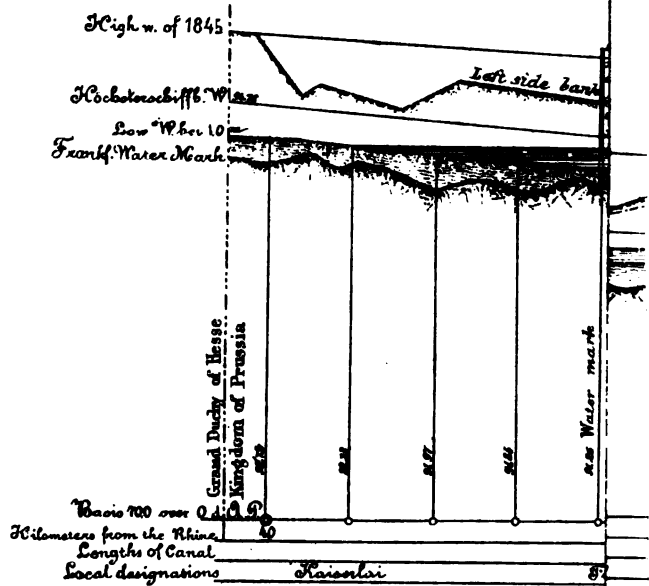
Thus, one of the districts most favored by nature for fertility is found to be employed under the system of extensive farming, and the same may be said with respect to many more of the best districts, and whenever the progressive system has been brought into play; this has only been pursued, with but few exceptions, upon the basis of a lenient employment of the soil, and it is unceasingly being tried to impress upon the minds of the agricultural classes in this country, that one of the points in their farming operations which in most cases calls for a revision is the mode of employment of the soil in the different kinds of products in the several rotation of crops.

HENRY B. RYDER,  
*Consul.*

UNITED STATES CONSULATE,  
*Copenhagen, January 25, 1886.*

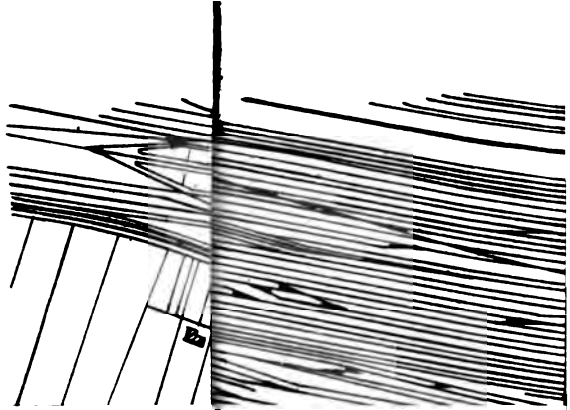






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**CANAL AND HARBOR WORKS AT FRANKFORT-ON-THE-MAIN.***REPORT OF CONSUL-GENERAL MUELLER.*

The ancient town of Frankfort-on-the-Main on the 16th of October celebrated the inauguration of certain public works, which deserve to be brought to general knowledge. The river Main having been canalized from Frankfort to Mayence, where it enters the Rhine, a distance of twenty English miles, and splendid harbor works being partly finished, partly in course of erection at Frankfort, this town seems to have arrived at a new phase in its history. It is becoming a Rhine port, most advanced to the east, and accessible to Rotterdam vessels carrying 1,000 tons and more. Formerly the large vessels carrying freight for Frankfort had to unload their cargoes at Mayence into the smaller Main craft. There being now ample accommodation for unloading, re-loading, and storing immense quantities of goods, Frankfort is placed in a condition to enter into new business channels; to participate in and to partake of a trade, from which in late years it had been excluded through its inability to offer or to use the great facilities which navigable water-courses afford. The cities of Mayence and Mannheim have reaped the benefits of Frankfort's isolation. Mannheim, the terminus of the Rhine navigation, has almost monopolized the southwestern German trade in petroleum, grain, foreign produce, and staple goods, and it has a prominence as a Rhine port not surpassed by any of its rivals. The government of the Grand Duchy of Baden, at the cost of 20,000,000 marks, has provided the city with excellent harbor accommodations, which have contributed much to the city's gigantic progress and business prosperity, and the effect of Baden's liberality shows that money invested in the correction and improvement of water-courses is always remunerative and well bestowed.

**TRADE OF FRANKFORT.**

The example of Mannheim's unparalleled progress has gradually opened the eyes of that class of antiquated Frankfort patricians, who, in their short-sightedness, had opposed the main canalization project, and only after nearly twenty years' strife the chamber of Commerce of Frankfort has the satisfaction to witness the inauguration of the public work. They have now, through their syndic, Mr. Puls, published an elaborate pamphlet entitled "In Remembrance of the Opening of the Main Canalization and of the Harbor-works at Frankfort, 16th October, 1886." This pamphlet informs the reader that Frankfort, holding a central position in Western Germany, before railroads were thought of, was the place where caravans from the trading and industrial towns of Southern Germany, Augsburg, Ulm, Nuremberg, and others, met the stream of goods coming from Antwerp and other places in the Netherlands, as well as from Saxony and other countries north and northeast. Even at the time of Charles the Great, Emperor of the Franks, who once had 5,000 Saxons driven into a river to have them baptized, Frankfort had already attained great eminence as a commercial town. This commerce increased in the course of the following six centuries. The navigation on the Main flourished notwithstanding the taxes levied by the adjacent potentates. Some remnants of the river dues have survived into this very century.

The discovery of America, the development of the interoceanic trades the transition of the great trade routes from the south of Germany, and the Mediterranean to England and the northern ports, altered to a certain degree the conditions upon which the Frankfort mediatory carrying and commission trade reposed. There was, however, the active, intelligent commercial community, which adapted themselves to circumstances, and there remained the communication by river to the east and to the west, which, prior to the invention of steam carriage, was of higher importance than to-day.

Frankfort, in this century, has become a market for money as well as for goods. The banking business enticed many people away from the trade in goods, as it offered quicker and larger profits. It is more tempting to lend money to the Grand Turk on good terms, securing repayment by some clever arrangement, than to barter with his subjects, or to sell them goods to be paid for when convenient. The Frankforters were not compelled to go so far as Turkey, there were better customers close at hand, but the time came when Frankfort regretted the trade it had partly lost by this one-sided money-dealing policy. Industries started up in the neighborhood, making it indispensable to create for them cheaper communication and transport than by rail; if it had been situated in the United States it would have by some heroic effort have removed itself to the shores of the Rhine. The petty political configuration was one of the obstacles in the way of all public improvement in a diminutive, antiquated sort of a republic, surrounded by jealous small principalities; they were hampered in all directions by the trist influence of the spectre of the Holy German Roman Empire, which was haunting the old musty palace in the Eschenheimer Gasse.

#### THE CANAL PROJECT.

As it was not feasible to take Frankfort to the Rhine, it became evident to some enlightened spirits that the Rhine must be taken to Frankfort. In 1866 Frankfort was annexed to Prussia. It has since that event increased largely in its business, and doubled the number of its inhabitants. The last census, rather over a year ago, showed about 155,000 souls. After the annexation, the chamber of commerce renewed their efforts for the improvement of the river. They applied to Berlin for permission to get plans made for a navigable canal from Frankfort to the mouth of the Main near Mayence—1868 for the right, 1870 for the left bank of the river. The plans were submitted to the Prussian Chamber of Deputies, and in 1874 the first installment of state assistance for a Main canal was voted—thalers 280,000, equal to \$210,000.

But the canal scheme was dropped when Mr. Cuno, Government architect and engineer, proposed to stow the river from Frankfort to Mayence by five movable weirs, which would procure the necessary depth of 2½ meters for large Rhine vessels up to Frankfort. The cost of the canalization is 5,500,000 marks.

After a great many delays, some of them being caused by the unwillingness of the Grand Duchy of Hesse, to share in the cost, at last the Prussian Government informed the Frankfort chamber of commerce in 1882 that the bordering states had agreed to the scheme of Mr. Cuno, and in the following year the work was commenced.

#### HARBOR WORK.

The cost of the canalization being met by the Prussian Government, the town of Frankfort had to provide for the harbors and accommoda-

tion required by the trade which will be attracted by the improvement of the river. Mr. W. H. Lindley, city architect, was charged with the planning and erection of the works, at a cost of nearly five million marks for the first arrangements, and a million and a half for the completion of them. The total outlay will reach the sum of \$6,500,000 marks, equal to \$1,547,000. The natural harbor, formed by the river in the very best of situations, has been provided with a lock at the entrance. It has been deepened, and offers room for fifty or sixty of the largest Rhine craft to unload into spacious docks at the same time, secure against floods and ice-drifts. The goods can be stored in the five large warehouses built by the town, one of which is finished, the others in course of erection, or they can be forwarded by rail to the central depot of the different lines now building in close vicinity, if they are not destined to be forwarded by smaller craft up the Main, through the wealthy valleys of Bavarian Franconia, towards Bohemia and the Danube. The new central depot will cost 30,000,000 marks, equal to \$7,140,000, and will be the finest structure of its kind in Europe. It will be remarkable for its huge size, as well as for its architectural beauty. Customs formalities can be undertaken on the spot; the customs warehouse will be large enough to store large quantities of goods for short periods, to allow their being parcelled out into smaller lots for expedition in different directions.

It is a circumstance which deserves to be noticed, that in Germany, in the wake of the development of a large system of railways, public opinion reverts to the old water-ways, and favors their utilization by means of correction and canalization. Following the example of France and Belgium, the rivers are getting better utilized and canals are planned or built in many directions.

#### RESULTS.

In concluding, it may be proper to allude specifically to one of the beneficial effects which the Main canalization is sure to produce. It will reduce the price of coal, an article indispensable to the poor and rich alike. From the Ruhr River, and directly from the mineral beds, the coal can now be shipped by water-craft to Frankfort, and then in smaller craft further up the Main. How much cheaper the people of Frankfort and vicinity will be able to purchase their coals is not yet known, but I do know that they will be grateful for any reduction of price in the necessities of life. It was chiefly owing to the difference in rates of freight that Frankfort was unable to compete with the Rhine ports. Freights on shipments of goods from Rotterdam, Hamburg, Bremen and so on, were higher than those to Cologne, Mayence, Mannheim, and other Rhine ports; and this disadvantage being now overcome by the canalization of the Main, Frankfort, with its unbounded pecuniary resources, will surely extend and increase its foreign trade in a large degree, and will in course of time become an important mart for cotton, petroleum, grain, and foreign produce; and inasmuch as the city is in closer and greater business relations with the United States than any other German city, it is safe to anticipate that American interests shall not suffer by the new order of things. In connection herewith, it should be remembered by the American people that not only Frankfort's commercial interests are in many respects identical with our own; that it has no equal in the extent of its investments and dealings in American securities, and that, last, not least, Frankfort's financial men,

encouraged and supported by the German people, have stood by and sympathized with the cause of the Union, in the gloomy days of the unfortunate civil war, when other European countries, under pretence of neutrality, were ill-disposed or hostile toward the Federal Government.

JACOB MUELLER,

*Consul-General.*

FRANKFORT-ON-THE-MAIN, *October 23, 1886.*

## RAILWAY SCHEME FOR THE CONGO.

### REPORT OF MINISTER TREE, OF BRUSSELS.

I had the honor to report to you in my No. 148 the rupture of negotiations between a group of English financiers and the Government of the Independent State of the Congo for the construction of a railway on the Congo River.

Recently the Belgian Society of Engineers and Industrials, which had been carefully examining the feasibility of a railway on the Congo, have made an elaborate report favoring such an enterprise.

The result of this report is the organization of a company in Belgium under the title of "Compagnie du Congo pour le Commerce et l'Industrie." Its objects are the study and survey of a railway from the Lower Congo to Stanley Pool; its eventual construction; the establishment of a line of steamers between Antwerp and Boma; the construction of ports, docks, bonded stores, &c., and the development of the natural wealth of the country.

Its purposes seem to cover a good deal of ground, but for the moment it will concern itself only about the first of these objects, to wit, the study of the question of construction on the spot and the actual survey, all of which is done at its own expense. A period of eighteen months, it is said, is deemed necessary for this purpose. It is understood that this company has entered into an agreement with the Congo State Government which gives it liberal grants of land and other privileges in case it exercises its option to construct the railway. Among its shareholders are said to be the principal bankers, manufacturers, and merchants of Belgium.

This scheme follows very quickly the collapse of the English syndicate, and the turn matters have taken is very gratifying to the King, who, in a recent speech made to a committee of engineers, took the opportunity to express his satisfaction.

Before entering into negotiations with the English syndicate, he had tried in vain to get the Belgians to take hold of the enterprise. It was not, however, until after the English had eagerly seized upon what they had rejected, that they began to manifest any special interest in the matter. When the negotiations with the English were finally broken off, as I have reported, the Belgians lost no time in availing themselves of the opportunity presented to them.

LAMBERT TREE.

LEGATION OF THE UNITED STATES,  
*Brussels, November 8, 1886.*

**TUBULAR SUBWAY TO PRINCE EDWARD ISLAND.***REPORT OF CONSUL KEIM.*

When, in 1872, Prince Edward Island went into confederation, the Dominion Government guaranteed among other things to keep open winter communication with the mainland, and in 1873 the winter steamer *Northern Light* was put on to do this. She failed. High tides bring immense quantities of ice up and down the strait.

The amount of subsidy granted annually by the Government to this province for ice-boat, summer steamers, and loss on island railway is about \$200,000.

In 1873 Hon. George W. Howlan, a member of the Dominion senate, and since 1862 a United States consular agent, conceived the plan of an iron tubular railway for a railway track, so goods can be shipped through at all seasons without change of bulk, shortening the time not hours but days, and increasing trade with the United States, as there can be no moving of freight during the winter months.

The shortest distance from Prince Edward Island (Carlton Head) to the mainland in New Brunswick is  $14\frac{1}{2}$  miles. It is proposed to run out on piles 1 mile from the New Brunswick shore.

The tunnel will be 16 feet in diameter, built in segments of five segments to the circle, in 10-foot lengths, composed of iron, and lined inside with 2 feet 8 inches of concrete in the bottom and 1 foot around the circle. It will be laid by a plan recently patented in the United States by H. H. Hall, president of the Submarine Tunnel and Tube Company of New York, and exhibited here lately at the Provincial Exhibition.

The Dominion Government made a survey of the strait this summer over the proposed route. The bottom was found free from rocks and composed entirely of brick-clay.

The work is thought a simple and practicable one, and will take about three years to build from the time it is started, and will cost about \$5,000,000.

HENRY M. KEIM,  
*Consul.*

UNITED STATES CONSULATE,  
*Charlottetown, Prince Edward Island, October 25, 1886.*

**ELECTRIC LIGHTING IN VIENNA.***REPORT OF CONSUL-GENERAL JUSSEN.*

The city of Vienna, including its several suburbs, which are so closely connected with the city proper that no vacant space whatever intervenes between city and suburb, contains a population of more than a million souls, the city proper alone having a population of 704,756 according to the census of 1880.

The principal industries carried on in the city of Vienna and its suburbs are the manufacture of metal wares, machinery, tools and instruments, stone ware, terra cotta and wooden ware, bone and gutta percha ware, fans and other fancy goods, and notions and textile goods, cloth-



ing and millinery goods, paper and leather goods—all of which establishments necessarily consume a considerable quantity of lighting material. Aside from these manufacturing establishments there exist a very large number of coffee-houses and restaurants in the city, which probably consume more light than the manufacturing establishments.

According to statistics, but recently published, for the year 1884, the city of Vienna proper, exclusive of suburbs, during the year 1884 issued a license to 2,071 restaurants and to 798 coffee-houses. In the suburbs it is quite safe to say that the place of refreshment are quite as numerous in proportion to the population as in the city, so that I think I am quite within the true figures when I estimate the number of restaurants and coffee houses in the city and suburbs together at the respectable figure of 3,500.

The city of Vienna is illuminated with gas. The proposition to illuminate the city with electric light has been considered and discussed by the common council of the city, but as yet no action has been taken except that a resolution has been passed to leave the establishment of electric central stations for private illumination to private enterprise.

A large, well-organized, and pecuniarily highly responsible company does not as yet exist in Vienna.

It would seem that nothing is wanting but the necessary capital to bring about the adoption of electric lighting for public as well as private purposes to a much greater extent than is the case at present.

The electric companies now transacting business in Vienna have so little capital at their command that they are compelled to insist upon immediate payment for all services rendered and investments made on behalf of their customers. I am assured by gentlemen who are thoroughly familiar with the situation and all its characteristics that any electric lighting company, no matter what its particular system might be, could at once enter upon a most lucrative and thriving business in Vienna if its capital were sufficient to extend the necessary credit to its customers.

The most important electric lighting companies now transacting business in Vienna are the following: Siemens & Halske, a branch of the German firm of the same name and style located in Berlin.

This firm manufactures its machines and lamps in Germany and imports them into Austria, paying a considerable duty and thus increasing the price of what might be produced here at more acceptable figures. The firm has obtained a Government concession for the building of a central station, but as yet it seems undecided whether it will avail itself of the privilege.

The firm of B. Egger & Co. has also procured a concession for the building of a central station, but has so far not improved the opportunity.

These and other firms have done but a very limited business in this city, as they have not had sufficient capital at their command to accommodate consumers here. Their business is more extensive in the provinces where large industrial establishments have had the means to make the necessary investments to procure electric light.

In these establishments, I am informed, the prices vary for incandescent lamps from  $\frac{1}{3}$  to 2 kreutzers, and for arc lights from 5 to 15 kreutzers per hour; the price varies with the use of water and steam or gas motors.

The restaurants, coffee-houses, and stores of Vienna would certainly be more easily persuaded to use electric light if their outlay could be

limited to the mere cost of the electricity consumed, and if they were not put to any expense for the apparatus, &c.

Aside from the firms above noted, the Imperial Continental Gas Association has the contract for lighting the city, has organized as an electric lighting company, and has contracted for the lighting by electricity of the two Imperial Royal Theaters, the Opera House, and the Burg Theater. It is charged, however, that this gas company is not at all anxious to smooth the path for electric lighting in Vienna, but desires only to be in the field in order to take proper care of its extensive interests as against possible competition.

The electric systems adopted here are those of Gramme, Edison, Hopkinson, Siemens, Schmelsert, Gülcher, Brush, Lippernowsky, and Déry.

Incaandescent lamps of Siemens, Edison, Lane, Fox, and Swan. Arc lamps of Gramme, Krizels, Hefner, Brush, and Gülcher.

As regards the question, whether Vienna has reliable water-power and how much could be obtained for electric-lighting purposes, no favorable answer can be returned. The Danube is the only considerable water-power, but it is too far from the city proper to be useful as a water-power without the building of expensive aqueducts, &c.

The Alpine spring water, the excellent drinking water of Vienna, is quite limited in quantity, so much so that from time to time the mayor of the city implores the people to use it sparingly and prudently.

From this source no supply whatever for industrial purposes can be expected, but there is water enough obtainable for the use of steam-boilers almost anywhere in the city.

The fuel most generally used in this city is coal, of which the best quality is sold at from 1 to 1.10 florins per meter-centner.

The city of Vienna does not own or control the gas business. As already stated, the Imperial Continental Gas Association has contracted with the city to furnish the public illumination. This contract insures a monopoly to the company until its termination, October 31, 1899. In the mean time no other company can obtain the privilege to lay pipes in the streets of Vienna.

The figures as to private consumption of gas are not obtainable; they are within the exclusive control of the gas company.

Gas consumption for public purposes is of course a matter of public record.

The last statistics of the city of Vienna, giving the figures for 1884, estimate the total consumption of gas for public purposes during the year aforesaid at 4,046,908 cubic meters, at a total expense of 364,859.36 florins.

The total consumption of gas for both public and private purposes has been estimated at from 50,000,000 to 60,000,000 of cubic meters per annum.

The price of gas is as follows: For all-night public flame (16 candles), at 141 liters per hour, 38.21 florins per annum; a half-night flame, 19.53 florins per annum; per cubic meter for private use, 9.5 kreutzers; per cubic meter for public use, 7 kreutzers. The usual prices paid for ordinary labor are from 1 florin to 1.25 per day, and for skilled labor of the highest order from 2 to 4 florins per day.

I am credibly informed that especially the firm of Kremenezky, Mayer & Co., Währingerstrasse 59, Vienna, and also Mr. Fr. Křižík, of Prague, who is a prominent electrician, surnamed the Czechian Edison, take great interest in the establishment of an electric-lighting company in Vienna, and stand ready to tender the use of their establishment as a basis for more extensive operations.

If American electric companies or capitalists desire to obtain more detailed information than I have been able to gather, they will doubtless receive a speedy answer to all questions, technical or otherwise, by addressing the honorable Regierungsrath, Wien I, Stadiongasse 4, Vienna, who is an authority on electric lighting, and has assured me that he will gladly communicate with any American firm that may desire to profit by his experience and thorough knowledge of the subject in question.

EDMUND JUSSEN,  
*Consul-General.*

UNITED STATES CONSULATE-GENERAL,  
Vienna, October 30, 1886.

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### PHYLLOXERA ON THE RHINE.

REPORT OF COMMERCIAL AGENT SMITH.

In my annual reports to the Department I have had occasion to refer to the appearance of small batches of phylloxera from time to time at different places in the vineyards on the Rhine, and to mention that energetic efforts were being made to stamp out the pest wherever it became known. For the past two years a systematic and thorough examination of the vineyards of the Rhine in Rhenish Prussia has been going on, and the result of the investigation has been published during the past week in the column of the North German Gazette (*Nord-Deutsche Allgemeine Zeitung*), a semi-official organ of the Government, and as what is contained in the article particularly affects this consular district, and may be of interest to the buyers and drinkers in the United States of Rhine wines, I make the following short report on the subject based on the article:

For a number of years past small batches of phylloxera have been discovered at various places in the vineyards of the Rhine, and efforts have been made to stamp out the pest, which means, it hardly needs to be said, destruction to a great German industry. The means taken, however, to exterminate the insect proved, up to 1885, unsatisfactory and largely unsuccessful, because not conducted in the proper way, for one body would hardly be wiped out at one place when the presence of another would probably be reported in some other quarter. The action was rather individual and spasmodic than concerted and regular, and it was found by experience that the endeavor to root out the scourge in particular localities as the insects made their appearance would not wholly answer, but that a complete and painstaking examination of all the vines of the Rhine would have to be made. This was a great undertaking, but seemed to be the only practical and efficient way of ascertaining to what extent infection actually existed, and of freeing the vinedressers of the Rhine from their implacable foe, whose ravages in France had brought such widespread and terrible destruction to the vineyards of that country. It meant the thorough examination of 17,000 hectares (42,500 acres) of vine-land.

This work was begun last year and completed during the present one, having been zealously and laboriously executed by numerous companies of experts, and under skillful leaders. The vines of Rhenish Prussia

have all been looked at, and the roots of every sickly or suspected one keenly scrutinized. In this way, in 1885, was half the province of Hesse-Nassau, and in the province of the Rhine the vineyards of the valley of the Rhine, and of the adjoining valleys, from Neuwied to Bonn, as well as those of the valley of the Ahr, gone over.

This year the remaining half of Hesse-Nassau, the valley of the Rhine above Neuwied, and the vineyards of the Moselle have been investigated. All the nurseries, too, of the Kingdom have been particularly attended to. The result is regarded as very gratifying. In the nurseries no signs of infection were found; also, none in Hesse-Nassau or along the Moselle. None, too, were found in the valley of the Rhine and valley of the Ahr, including their side valleys up to the localities where the insects were known to have ravaged, which have been found distributed over a district of about 25 kilometers (15½ miles) in the valley of the Rhine, and in the valley of the Ahr over about 8 kilometers. It is therefore highly probable that outside of this infected territory no infection exists, and that the pest has to be fought only in this comparatively small district of country, and that this task has been materially aided by the labors of the last two years. During 1886 but 37 new flocks of phylloxera have been discovered, which are believed to have come from old and large settlements, which had had twenty years in which to develop and spread themselves about, and these new bodies were found, for the most part, near old infected places. These 37 cases were located as follows: In the Lohnsdorf district, 11 cases, involving about 20 vines; in the Heimersheim district, 5 cases, embracing each 1 to 11 diseased vines, and 1 with 36; in the Ockenfels district, 17 cases, with 1 to 16 diseased vines each; in the districts of Linz and Linzhausen, 4 cases, affecting 1 to 12 vines each; and in the Leubsdorf district 2 cases, taking in 4 to 8 vines, making a total of 275 infected vines, or 7 for each infected spot. This makes, compared to the statistics of 1885, as published by the imperial department of the interior, a very favorable exhibit, as follows:

Items.	1885.	1886.
Number of swarms discovered .....	88	39
Diseased vines .....	2, 713	275
Average number of vines infected by each swarm .....	31	7

There is, therefore, good ground for hoping and expecting that by constant inspection of the vines in the infected localities and energetic treatment of all diseased and suspected ones the insect will become mastered and exterminated; but success is only to be obtained with the active co-operation of the vine-dressers themselves, and through careful attention to and observance on their part of all regulations on the subject made for the common good.

JAS. HENRY SMITH,  
*Commercial Agent.*

UNITED STATES COMMERCIAL AGENCY,  
*Mayence, November 2, 1886.*

**RABBIT PEST IN VICTORIA.***REPORT OF CONSUL-GENERAL MORGAN.*

Tame rabbits were brought to these colonies in very early years, but the common gray variety of wild rabbit, that has so overrun the country, was, so far as can be authoritatively ascertained, introduced by a large landed proprietor in the western district of Victoria about the year 1860, for the purpose of sport. From the western district they spread to the stony rises between Colac and Camperdown, in which place the splendid cover afforded them caused their rapid increase, and they multiplied with such astounding rapidity as to literally overrun all that portion of country.

Some years after they were taken to other parts of the colony. The pest soon after this was found in the neighborhood of Horsham, spreading thence into the Mallee country, extending northeast to Swan Hill.

The country west and north of Horsham being exceedingly favorable to them, consisting of sand hills, pine ridges, and scrub, they increase there greatly, and have done serious damage to crops during the past few years, principally since 1874.

So great has been their fecundity that there are now but few places in Victoria in which they do not exist, from Point Nepean along the coast, from Queenscliff to Geelong, in Gisborne, Ballan, Bacchus Marsh, away northwest to Nhill, and north to Swan Hill, along the Murray River, on the New South Wales and the South Australian borders, Gippsland and the surrounding district being the only place in which they are conspicuous by their absence. In the rangy district of Mansfield they have made an appearance, and the Buffalo, Howqua, King, and other rivers in the neighborhood of Bright and Myrtleford, are now invaded by the pests in large numbers. It is, however, noticeable that in places where the soil is hard, or the climate cold or wet, the rabbit does not increase to anything like the extent observable in country more suited to them, such as sand hills, pine ridges, &c. This is also another peculiarity observed, which will be borne out by all who have had any great experience on this subject, viz, that where hares increase and become numerous the rabbits do not. There may be an exception to this, such as on the Werribee estate; but, nevertheless, it is the rule.

**LOSSES SUSTAINED.**

It is doubtful whether many persons are aware of the immense loss that has been sustained in this colony through the ravages of the rabbits, but it is an undoubted fact that as much as £24,000 has been expended to clear one estate and keep the pests under, and in many others it has cost owners large sums, from £15,000 downwards.

In addition to the expense incurred by private owners, shire councils, and the government, in destroying the pests, the great depreciation in the value of land and its grazing capabilities has to be considered. For instance the stony rises, consisting of about 20,000 acres, and surrounded by some of the finest grass-land in Victoria, has been rendered of little value except for rabbits, the owners of the land obtaining a small rental

from trappers, and about 4,000 acres were, some while back, disposed of at the low figure of 10 shillings per acre. In the discussions in the colonial parliament on the introduction of the late "Mallee pastoral leases act," it was clearly pointed out that the country (12,000,000 acres) affected by the bill had been rendered almost useless and uninhabitable through the damage caused by the ruthless invader. Stations on which smiling homesteads, fine orchards, and other improvements had, a few years back, existed, were fallen into ruin and deserted by all living creatures except the rabbits. Here where the grass and salt bush in 1875 were sufficient for nearly seven hundred thousand sheep, enough did not grow in 1882 for one-seventh of that number, the loss during the past five years being estimated as at least three-quarters of a million sterling, besides £40,000 decrease to government in rents, and £20,000 expended in destroying the pests. To illustrate the damage here, I cannot do better than attach the particulars given of a few stations in the above discussion.

Year 1877, Bruin Station carried 36,000 sheep, rental £500; in 1879, 10,000; run abandoned; relet under grazing license for £56. Wouga and Nipo, once carrying 20,000 sheep; rental, £400; now not a sheep on the run, which was also abandoned and relet for £20. Lake Hindmarsh carried, in 1877, 33,000 sheep; lost 25,000 in two years; rent £700, now £72. Corong, 1877, 36,000 sheep, now 3,000; rent £1,050, now £150; and several others were mentioned as being in an equally bad position.

In the years 1875 and 1876 the production of wool in the Mallee country was about 5,000 bales, value £100,000. In 1882 this had fallen to 900 bales, worth, say, £18,000. Eighteen runs in this district in the year 1878 yielded 1,700 bales; in 1882, only 332 bales. The runs were all abandoned and the land held from government under grazing leases, at an almost nominal rent, by persons who trusted that something would be done to improve the tenure under which the land could be held, and give them an opportunity and sufficient inducement to endeavor by combined action to destroy the rabbit pest, and render the land once more fit for profitable occupation.

Whether the lengthened tenure now give to this part of the colony will enable the desired result to be achieved remains to be seen.

#### REMEDIAL MEASURES.

During the past three years the government has expended about £30,000 in Victoria on the extirpation of the rabbit, the principal means used being poison, such as phosphorized oats and wheat, arsenic mixed with bran and chaff, and bisulphide of carbon.

The various shire councils in the badly-infected districts have also adopted similar means, though in the majority of cases the rabbit act has not been strictly enforced, many of the shires not being in a position to incur the extra expense necessary to do so.

In addition to the means above mentioned, the councils have arranged for the purchase of rabbit skins or ears and scalps, and have been assisted by the government to the extent of a bonus of 3d. per dozen on all skins or ears and scalps purchased by them. From reports published at various times in the papers and inquiries made, the number of rabbits destroyed has been considerable—at least 157,000 dozen, equal to 1,884,000 scalps and ears and skins being paid for in less than two years, the St. Armand and Swan Hill shires being the largest purchasers.

In the Colac and Camperdown district a preserving factory was started some few years back, and operations carried on with vigor, the factory working each year for about six months, from March to October, and during that period purchasing from 750,000 to 1,000,000 rabbits, the price paid being about 2s. 6d. per dozen. These rabbits are nearly all obtained from the stony rises and surrounding districts, as they cannot be sent to the factory in proper condition from any great distance.

The sum voted this year by parliament for rabbit extirpation is £10,000, and I learn from the Sydney papers that in New South Wales no less than £74,000 has been voted for the same work, and in South Australia the amount is £30,000; so that it will be seen that Victoria is by no means the greatest sufferer, more especially as she is at the expense of labor and material on Crown lands in pastoral occupation, as well as Crown lands unoccupied.

The number of skins exported from Victoria during 1883, as near as can be ascertained, was four millions, and the area of land more or less infested is about twenty million acres.

Having given the above sketch anent the introduction, spread of, and damage done by the rabbits, I will now give a few particulars respecting their fecundity, and the methods and means employed to destroy them.

In places where the pest is numerous they can be considerably reduced by trapping, hunting with dogs, and shooting; but these methods are expensive, slow, and will never more than thin them out, leaving plenty to multiply again. It can be asserted on good grounds that one pair of rabbits will, under most favorable circumstances, increase in two and a half years to the enormous number of two millions; this is assuming the district suits them. But, allowing that they only increase to one-fourth of that number, it may be easily seen how necessary it is to be continually on the watch to destroy them.

Phosphorized oats are much superior to trapping in results and less expensive, but unfortunately experience proves that they will not always eat this grain, and when grass is at all plentiful the rabbit deems it a much greater delicacy. Singular to say, phosphorized oats are not found effective in all parts, instances being well known in which that poison has been greedily devoured in one district whilst at the same time in an adjoining one nothing would induce the pests to touch it, bran, chaff, and arsenic being preferred. Neither of the latter mixtures can, however, be used with any effect in wet or damp weather.

Arsenic and carrots or phosphorized wheat have also been found effective when the other poisons mentioned fail.

I am informed by the Hon. A. Morrach, secretary for lands, that there are about 500 miles of rabbit-proof wire net fencing erected in this colony of Victoria at an average cost of £80 per mile.

The estimated damage by rabbits would be difficult to ascertain, but it may be safely stated that during the last ten years the loss caused by the pest, through decrease in carrying capabilities of land, destruction to crops, loss of rents, &c., would amount to at least 3,000,000 sterling.

JAMES M. MORGAN,  
*Consul-General.*

UNITED STATES CONSULATE-GENERAL,  
*Melbourne, October 5, 1886.*

**INDUSTRIAL EXPOSITION AT BUENOS AYRES.***REPORT OF CONSUL BAKER, OF BUENOS AYRES.*

As showing the progress which agriculture and the mechanical arts are making in the Argentine Republic, and as illustrating the interest which the people here are beginning to manifest in the development of industrial pursuits, I have to mention two exhibitions which have recently taken place in the city of Buenos Ayres. I refer to the second industrial exposition of the Italians of the River Plate, and the fair held under the auspices of the Argentine Rural Society.

**ITALIAN EXPOSITION.**

In regard to the first of these exhibitions, it is sufficient, perhaps, to say that it was an expansion of and enlargement upon a previous one, held in 1881, under the same auspices, a full account of which was sent by me at the time.\*

What made these two exhibitions the more interesting was the fact that they were not only distinctively Italian, but that the exhibits were the handiwork or manufacture exclusively of Italians who are settled in the Argentine Republic. The present one was held in a handsome building, covering a large plot of ground, erected expressly for the purpose and made attractive by landscape gardens, fountains, music halls, &c. For several months its exhibits in every line of raw materials and produce, machinery and mechanical inventions, manufactures and handicraft products, sculpture, paintings, models, and the plastic arts generally, drew large crowds of people from all parts of this and the other provinces, as well as Paraguay and Uruguay. No better or more conclusive evidence than that afforded by this exposition was needed to illustrate the work which the Italian immigrants to the River Plate are doing towards the development of the country of their adoption. Indeed, as I have had occasion to say before, it is to the Italians in their midst more than to any other people that the Argentines are indebted for the wonderful progress which is taking place here in almost every department of human industry.

**ARGENTINE RURAL FAIR.**

The Rural Exhibition, also recently closed, was especially attractive from the fact that it was "international," *i. e.*, free to the competition of the whole world. It was held on the permanent grounds of the Argentine Rural Society, Palermo Park, where all the necessary structures, exhibition halls, special pagodas, stables, &c., have been erected in handsome styles of architecture. The exhibition comprised: (1) Animals, including horned cattle, sheep, horses, asses and mules, hogs, goats, dogs, domestic birds, &c.; (2) Agricultural produce, including all cereals, vegetables, fruits, plants, vegetable products, &c.; (3) Agricultural implements and machinery; (4) Vehicles, including all sorts of land carriage; (5) Mills and milling machinery; (6) Pumps and apparatus; (7) Steam engines and motors; (8) Fencing and fencing materials; (9) Wools; (10) Hides and pelts; (11) Meats and other animal

\* See Consular Reports, No. 10, p. 213; No. 13, p. 417; No. 19, p. 105; and No. 24, p. 508.



products, including mare's grease, lard, tallow, suet, cheese, butter, ostrich feathers, silk, honey, wax, &c.; (12) Models. The whole number of entries was 1,639, not including a large number of articles placed on exhibition but not admitted in the competition.

*Horned cattle.*—In this group there were 191 exhibits embracing 85 pure Durhams and 32 crosses, 35 pure Herefords and 5 crosses, 3 pure Devons and 1 cross, 5 pure Polled Angus and 6 crosses, and 14 exhibits of fat cattle.

*Sheep.*—There were 492 exhibits of sheep, embracing 134 pure Rambouillet for wool; 179 pure Rambouillet for wool and carcass; 59 pure Negrettis; 71 pure Lincolns, Cotswolds and Leicesters; 26 "mestizos," or crosses; 23 Southdowns, Shropshires, Hampshires, Oxfordshires, Romney Marshes, &c.

*Horses.*—In this group there were 113 exhibits of all kinds, including work-horses, carriage-horses, saddle-horses, race-horses, &c., as well as breeding-horses, and embracing pure bloods, born abroad and in the country, of the best English stock, as also pure French, Normandy, Percheron, Clevelands, Anglo-Normandy, Olemberg, pure Arabians, Trakhnens, United States Morgans (pure and crossed), Russian and Orloff hunters, &c.

*Other animals.*—There were 28 exhibits of hogs, embracing pure Berkshire, Yorkshire, Normandy, and United States; and 16 exhibits of asses and mules, and various exhibits of guanacos, llamas, alpacas, and their crosses. In the dog department there were French and Danish dogs, English greyhounds, fox terriers, shepherd dogs, &c., but the breed which seemed to attract the most attention were the woolly-looking animals from Terra del Fuego. There were many exhibits of domestic fowls, mountain turkeys, criolla ducks, geese, pheasants, &c.

From these figures it will at once be seen that the display of animals was not only very large, but comprising more than the usual varieties of breeds generally seen on these occasions.

#### *Exhibits of agricultural products.*

The cereal department was not large, owing to an unexplained lack of interest on the part of the farmers, but it showed the steady advance which agriculture is making in the Argentine Republic. The samples of wheat from this Province and Santa Fé were very fine, as were also those of maize, white and yellow; likewise of alfalfa, which produces at least six crops per annum in this country. There were also handsome displays of different varieties of potatoes, sweet potatoes, beans, squashes, onions, peas, and other kinds of vegetables; as also of fruits, dried and preserved—all the products of the country, such as canned peaches, pears, apples, oranges, figs, grapes, &c. Also a beautiful display of San Juan raisins, a few samples of Argentine cotton, tobacco, silk, textile plants, &c. The department of vegetable products included exhibits of the famous wines of Mendoza and San Juan, white and red table sherreys, ports, muscatels, &c.; alcohol and high wines, brandies, flour, corn-meal, starch, Tucuman sugars, San Juan and Tucuman cigars; the whole display showing the wonderful development which during the last few years has taken place in the agricultural interests of the Argentine Republic.

#### *Agricultural implements and machinery.*

What, however, more than any other department attracted my attention, from the fact that our own manufacturers are especially inter-

ested in the matter, was the magnificent display of agricultural implements and machinery.

In no State fair held in the United States have I ever seen a finer or more extensive assortment of samples, the entire manufacturing world being represented. The number of entries was 580, of which 115 were exhibits of different varieties of plows, not only the Argentine Republic, but France, England, Scotland, Germany, Sweden, Canada, and the United States being represented. Of the exhibits from the United States, J. Mohr, Bell & Co., of this city, displayed samples from the works of Parlin & Orendorff, Canton, Ill.; also of A. B. Farquhart, York, Pa.; also of David Dradly, Chicago, Ill. Thomas G. Foley & Co., of this city, exhibited the make of A. B. Farquhart & Co., New York; also of S. L. Allen & Co., Philadelphia; also of Helbourne & Jacobs, Columbus, Ohio. Miguel Lanus, of this city, exhibited the make of Collins & Co., Hartford, and J. Moore & Sons, New York.

There were exhibits of 20 different planting machines, of which 7 were from the United States. Foley & Co. exhibited the corn-planters of S. M. Macombert & Co., Grand Island; Lanus & Co. those of A. B. Farquhart & Co.; J. & J. Drysdale those of P. P. Mast & Co., and Larousse & Co. those of Assay & Wood.

There were exhibited 42 different varieties of reaping and mowing machines, of which 24 were of European make and 18 United States. Among the latter, J. Mohr Bell & Co. exhibited the mowers and self-binding reapers manufactured by McCormick & Co., Chicago; Thomas G. Foley & Co. those of the manufacturing company of Sandwich, Ill.; J. & J. Drysdale those of the Walter A. Wood Company, of Hoosac Falls, N. Y.; and Lanus & Co. those of Adrian Platt & Co.

There were 40 exhibits of thrashing-machines and separators, of which 32 were of Argentine and European manufacture and 8 of United States manufacture. Of the latter, Foley & Co. exhibited machines of the Pitts Agricultural Works, of Buffalo, N. Y.; of Dick & Pierce, Racine, Wis., and of Wheeler, Melick & Co., Albany, N. Y. M. Lanus & Co. exhibited those of Kingsland, Ferguson & Co.; J. Mohr Bell & Co. those of Johnson & Field, Racine, Wis.

There were 38 different steam-engines and motors exhibited, mostly, however, from the Argentine Republic, England, and France, 6 only being from the United States, M. Lanus & Co. exhibiting those of A. B. Farquhart & Co. and of the Chipwan Engine Company, Foley & Co. exhibiting those of the Westingham Machine Company, of Pittsburgh, and of Wheeler, Melick & Co., of Albany.

I shall not undertake to enumerate the exhibits of wind-mills, pumps and pumping apparatus, norias, artesian perforators, corn-mills and shellers, fan-mills, horse-powers, carriages, carts, wagons, horse-rakes, harrows, rollers, barrows, hay and other presses, cutting-knives, scythes, sickles, and many other implements and inventions, in nearly all of which the various manufacturers of the United States were duly and handsomely represented.

#### MACHINERY AT WORK ON THE GROUNDS.

What added greatly to the completeness of the exposition was the fact that the leading importers and dealers in agricultural machinery, of some of whom I have incidentally mentioned the names, had built for the purpose their own separate kiosks or pagodas, in which their exhibits were handsomely displayed, and where, with steam-engines in position, they were able to show the working of their machinery. These

practical tests were greatly appreciated by the crowds constantly in attendance, and assisted much in illustrating the merits of each machine. I might add a list of the premiums which were awarded, but in a report like this it would hardly be expected, and might do injustice to meritorious exhibits, which failed to meet the approval of the awarding committees. It is sufficient to say the United States came out with full honors.

E. L. BAKER,  
*Consul.*

UNITED STATES CONSULATE,  
*Buenos Ayres, August 18, 1886.*

## THE ALTENBURG EXHIBITION OF 1886.

### REPORT OF CONSUL MILLAR, OF LEIPSIQ.

This exhibition was a local undertaking, primarily intended to collect and make better known to Germany at large the products and industries of the little Duchy of Sachsen-Altenburg. It deserves attention as a sign of German enterprise in the remoter districts and as an indication of the way in which foreign productions may in future be brought under the notice of the rural population of Germany.

### GLOVES AND IVORY BUTTONS.

The Duchy of Sachsen-Altenburg is one of the minor principalities of Germany, with an area of 1,323.75 square kilometers (about 511 square miles), and a population of 155,000 inhabitants. The duchy, though of such small extent, is well known in Germany for its fertility and the prosperity of its agricultural population. In the towns various industries are carried on, especially the manufacture of kid gloves for export to America and the fabrication of vegetable-ivory buttons from the fruit of the South American palm.

Both of these trades were well represented, the principal exhibitors of leather gloves being the firm of I. L. Ranniger & Sons, in Altenburg, who exhibited not only the raw material and the finished gloves, but also the different processes of glove-making. Glove-making belongs to the so-called "home industries" of Germany, and is extensively followed in the smaller towns and villages not only of Altenburg but also of the kingdom of Saxony and in other neighboring states. The gloves are consequently manufactured at an exceedingly cheap rate, and, notwithstanding the heavy duty, compete successfully in the American market with native productions.

The ivory-button industry is located in the two towns Schmollen and Goessnitz, and the two leading firms, Gebrueder Donath, in Schmoelln, and Carl Brand, jr., in Goessnitz, exhibited specimens from the fruit in its natural state up to the ivory button finished, dyed, and polished. The finished buttons are exported to all quarters of the globe. Formerly the raw material could be procured very cheaply, but the great demand which has grown up with the extension of the industry has caused the fruits to rise considerably in price.

### OTHER INDUSTRIES.

Porcelain was well represented by the firm of F. A. Coch, in Kahla, who erected a miniature porcelain factory, where the process could be

observed. Other large manufacturers of porcelain are F. A. Reinecke, in Eisenberg, and the Roschitzer Porcellanfabrik, in Roschitz.

A large collection of hats of all kinds was shown by Max Foerster, a prominent manufacturer in Altenburg.

Pianos, accordeons, harmonicas, pottery, textile goods, and leather work were shown by different firms engaged in those trades, and some very excellent carriages were exhibited by A. Krasselt, of Altenburg.

#### AGRICULTURE.

In the agricultural department great interest was attracted by the machines, specimens of which were shown in operation by several German houses from Leipsic and Magdeburg. Among those from the last-mentioned city was an English firm which has established a factory there. The machinery in general, though inferior in finish to American work, was of good workmanship and very serviceable; at the same time it was much cheaper than American productions. To enable a comparison to be instituted between German and American goods, I subjoin a list of the chief firms who exhibited, and their prices. In making the comparison it must be remembered that, in addition to sea and land freight, duty is levied on machinery imported into Germany.

On the 10th, 11th, and 12th of September there was also an exhibition of cattle bred in the duchy. Several hundred head, large and small, were shown and fully maintained the reputation of the district for good breeding. The cows were principally of the Simmenthal and Aldenburg breeds; but Dutch, East Frisian, and other breeds were fairly represented. Among the hogs Berkshire and a Yorkshire cross appeared to be the favorite breeds.

Draft horses were also numerous exhibited and indicated a desire on the part of each owner to have his animals all of the same color. Hanoverians were here in the majority, but French, English, Prussian, Danish, and Mecklenburg animals were also shown.

From one estate were sent some specimens of English thoroughbred and half-bred horses.

With a few exceptions the cattle were fine specimens and in good condition.

Among other exhibits in this department may be mentioned samples of the agricultural products of the duchy, chiefly cereals; an exhibition of bees, a steam dairy, and a sausage factory. Horticulture was well represented by plantations of young fruit trees.

Although manufactures and agriculture formed the staple of the exhibition the fine arts were not absent. The goldsmiths of Altenburg sent specimens of gold and silver work.

Some fine stained-glass windows were placed in the chief pavilion, together with some oil paintings by local artists. Wealthy residents in the duchy also sent specimens of antiquities, such as mediæval court dresses and armor, old coins, illuminated manuscripts, and early specimens of printing:

#### RESULTS OF THE EXHIBITION.

The general arrangement of the exhibition was excellent. A meadow in the suburbs of Altenburg had been secured, and the exhibition buildings were ranged around three sides of a square, the center of which was tastefully laid out as a public garden with lawns, gravel walks, and a fountain. Music was provided by the bands of several regiments, and at nightfall the grounds were illuminated by the electric light.

The chief value of such an exhibition as this is to be found in its influence upon the rural population. The peasants of Altenburg are reckoned among the wealthiest in Germany. Their farms vary from 9 to 10 acres in the smallest cases, to 100 to 125 acres in the largest. They are exceedingly industrious, rising at 3 in the summer or 5 in the winter, and working until 7 in the evening.

Their houses and stables are kept clean and in perfect order. They live well on soup, vegetables, bread, butter, and cheese, with meat (chiefly pork) every day, brandy and beer. What their income is cannot be accurately estimated, as it varies from year to year with the crops. Of late years, owing to a succession of bad harvests and the low prices in the markets, it is believed that the invested capital has produced little more than 3 per cent. interest.

The condition of the farm laborers is also good. In addition to full board and lodging of the kind above mentioned, he receives about 300 marks (about \$72) yearly wages.

These people are, as a rule, very conservative. Not having many opportunities of coming into contact with town life and culture, their experience is limited and their ideas few. They are slow to understand and adopt novelties. A large number still retain the peculiar peasant costume; for the men wear an old-fashioned long-tailed coat and knee-breeches, and the women a silk cap, with wide hood behind the shoulders, a short, tight black silk skirt, with embroidered border, reaching to the knees, and black stockings.

I have learned, however, from persons who have had a long acquaintance with the Altenburg peasants that considerable progress has been made during the last 20 years. The wealthier peasants have sent their daughters to boarding-schools and their sons to agricultural colleges. The younger generation ceases in many cases to wear the antique costume, and is more susceptible of external influences. To a district in such a state of transition an exhibition like the one at Altenburg does much good, because it enables the peasant to compare his own position with that of his neighbors; to see what improvements have been made in the world around him, and to judge of their applicability to his own circumstances.

SAM'L ROLFE MILLAR,  
*Consul.*

UNITED STATES CONSULATE,  
*Leipsic, Germany, October 25, 1886.*

#### APPENDIX.

The following are the names of the principal exhibitors of agricultural implements at the Altenburg Exhibition, with the prices, so far as they could be obtained:

##### *Feed and turnip cutters.*

- Carl Allendorf, in Goessnitz :  
Feed-cutters, \$14 to \$25.  
Turnip-cutters, \$10 to \$13.
- H. Lang, in Mannheim, Baden :  
Feed-cutters, \$23 to \$35.
- E. Nauendorf, in Meuselwitz :  
Feed-cutters, \$15 to \$23.
- Schmidt and Spiegel, in Halle.

*Mowing-machines (imitation Wood's).*

Carl Allendorf, in Goessnitz, about \$85.

*Fanning-mills.*

Carl Allendorf, in Goessnitz.  
 Louis Barthel, in Nobitz.  
 Robert Barthel in Gnadschuetz.  
 F. W. Kirmse, in Altenburg.  
 H. Lang, in Mannheim.

*Plows and harrows.*

M. Dittrich, in Muelzen.  
 H. Froehlic, in Schoenberg.  
 Gross & Co., Eutritsch, near Leipsic:  
 Steel plows, \$12.50 to \$30.  
 Imitated Acme pulverizer, \$23 to \$25.  
 Harrows (iron) for one horse, \$9 to \$15.  
 Harrows (iron) for two horses, \$18 to \$24.  
 Steel plows, two furrows, \$10.25 to \$11.  
 Steel plows, three furrows, \$12 to \$13.50.  
 Rollers (wood), \$30 to \$42.  
 Rollers (iron), \$38 to \$52.  
 Drills (seeders), \$50 to \$110.  
 Hand-drills, \$20 to \$38.

*Thrashing-machines.*

C. A. Klinger, in Altstadt, \$500 to \$560.  
 E. Nauendorf, in Meuselwitz, small machines, \$240 to \$300.  
 Garret, Smith & Co., near Magdeburg:  
 Machines, \$800 to \$1,000.  
 Engines (6 horse-power), \$945 to \$980.  
 Engines (8 horse-power), \$1,170 to \$1,200.  
 Engines (10 horse-power), \$1,360 to \$1,400.

## TARIFF OF ECUADOR.\*

[Transmitted by Vice-Consul-General Reinberg].

The Congress of the Republic of Ecuador, considering that it is necessary to meet the wants which the customs laws have brought to light, and to reform some of the classifications in their dues, decrees, that in charging the import duties on foreign articles that may be introduced through the custom-houses of the Republic said articles shall be divided into the nine following classes, viz:

- (1) Articles whose importation is prohibited.
- (2) Articles free of import duties.
- (3) Articles whose duty is that of 1 cent for each kilogram, gross weight.
- (4) Articles whose duty is that of 2 cents for each kilogram, gross weight.
- (5) Articles whose duty is that of 5 cents for each kilogram, gross weight.
- (6) Articles whose duty is that of 10 cents for each kilogram, gross weight.
- (7) Articles whose duty is that of 50 cents for each kilogram, gross weight.
- (8) Articles whose duty is that of 1 dollar for each kilogram gross weight.
- (9) Articles whose duty is that of 25 cents for each kilogram gross weight.

N. B.—The above rates are in *sucre*s, 1 *sucre* being equal to the Peruvian *sol*, or 75 cents in American gold.

I. The following articles belong to the first class, viz: Sugar cane, rum and its components; bullets, cannon balls, shells, and other warlike appurtenances; liquids which contain obnoxious substances and injurious to health; carbines, rifles, fire-works, ball-pistols and other elements of war; dynamite and other explosives; postage-stamps; statues, books, paintings, and writings which are immoral or irreligious; kerosene of less than 150°; machines for coining; false coins or coins not tolerated by law; copper and nickel coins; powder and salt so long as the Government holds the

\* The tariff for 1885 was printed in Consular Reports No. 58, November, 1885, p. 197.

exclusive right for importing same. The Government only can introduce elements of war, copper and nickel coins, coining machinery, and any other of the above-mentioned articles which the Government may decree.

II. The following belong to the second class (free entry), viz: Passengers' luggage not exceeding 92 kilos, for each person, it being understood that this luggage comes by the same steamer as the passenger; for any quantity in excess of this weight, duty will be charged; it will also be understood that by luggage is meant only such articles which are considered necessary for personal use, including arms and instruments necessary to the profession or trade of the passenger, although they may be quite new; tar, pitch, rope for vessels, copper, canvas, and other articles which are necessary for the construction or fitting out of ships, according to manifest presented and vided by captain of port and approved by the treasury department; the natural products and manufactures of Peru and of the United States of Colombia of non-prohibited introduction in Ecuador, when these are imported through overland ports; this privilege shall continue in force as long as same is reciprocated by Peru and the United States of Colombia; articles destined for the use of Catholic churches, which are imported by the faculty of said churches and approved by the Government; articles destined for the personal use of the foreign ministers or diplomatic agents accredited before the Ecuadorian Government, as long as reciprocity exists on the part of the nation which they may represent; the foreign diplomatic agents must present to the administrator of the customs or the commander of the coast guards, in connection with their passports, a written and signed list with the number of cases or packages, together with their marks and numbers; should these effects not arrive at the same time as the foreign representative, he shall address himself to the minister of foreign affairs, manifesting the articles which he intends to import or bring in for his own personal use, so that the minister of foreign affairs may send a corresponding order of dispatch to the administrator of the customs; machines, tools, tin, and other substances destined for the working of mines; articles for foreign religious institutions established in the country and which in virtue of treaties anterior to this law, when privileged by such a concession, this privilege will not be abolished when said treaties may be renewed; articles destined for public instruction or for the service of charitable establishments, imported by order of the Government; articles which may be ordered for account of the Government to be used for public declarations; fire-brigade hose, pumps, &c.; live animals; rowing boats and other small craft; floats and buoys of iron; ships put together or in parts; coal, wood or animal charcoal; fresh fruits; guano; lint for wounds; bird's eggs; coined money of gold or silver; samples of goods and other articles in small pieces without value; gold in bars or dust; wood for masts and yards of vessels; silver in old plate or bars; oars, life-buoys; seeds of all kinds for planting.

III. The following belong to the third class (1 cent per kilogram), viz: Bran, garlic, Roman cement, sweet potatoes, hides (fresh and salted); cocoanuts (dried and fresh), such as those of Guayaquil; clay bricks, fresh vegetables, unprepared grain, dry straw and hay for fodder, water filters, slates for roofing, pig-iron, grain for the food of cattle.

IV. The following belong to fourth class (2 cents per kilograms), viz: Anchors, unworked steel, pitch, wire and nails for fencing; ploughs, picks, shovels, spades, and rakes for agriculture; empty jars, crowbars, tar, empty bottles, copper and bronze in sheets or bars, iron ridge angles for roofs, lime, mule and hand carts, barley, iron nails, empty demijohns, staves for barrels, weed hooks, tin in bars, portable railroads and accessories, iron rods, iron sheets, iron funnels, iron roofing, iron shafts for steamers, printing presses and accessories, printed books and pamphlets, earthenware, hops, Indian corn, agricultural and industrial machinery; wooden boards (rough, sawed, and in beams); boards for building, picks of wood or iron, paper for printing, writing paper, sheathing and lining material for ships, salt fish from Peru, slates for writing and slate pencils, harrows and rakes, earthen retorts for gas, cart-wheels, wheels and parts belonging to agricultural machinery, gutters and pipes of iron or of clay of more than 12 centimeters interior diameter, printing inks, wheat, zinc in the rough state.

V. The following belong to the fifth class (5 cents per kilogram), viz: Almonds, canary seed, starch of all kinds, annatto or arnotto, poisonous liquid preparations for fresh; raw cotton, with or without seed; harness, alum, lavender, sugar, rice, machine oils, spirits of turpentine, soda-water machinery, barometers, sea compasses; empty barrels, tubs, pipes, and hogsheds; iron chains for ships and small craft, pasteboard for books and binding, all sorts of vehicles fitted or in parts, parts of before-mentioned vehicles, beer of all sorts, cumín seeds, coca, Chili cocoanuts, crucibles, common glassware, sacking cloths, untanned hides of small animals; raw, coarse sugar; "chicha," an alcoholic drink made of corn or grapes; salt meats, oakum of all sorts, statues of all sorts of more than 1 meter, brooms with or without handles, vermicelli, dried fruits and other unprepared eatables; flour of wheat, corn, or other grains; thread of cloth called "hilacha," ham, sisal or manila cordages, common soap, kerosene of 150°

or of higher proof, linseed, fine porcelain ware, all classes of "machetas;" music, printed, manuscript, or lithographed; grave-stones or mausoleums of more than 1 meter, organs for churches, nuts, raisins, broom straw, stones of all kinds not before mentioned; columns of iron, marble, or other substance; lead in the rough, refined salt for table use, saltpeter, empty bags of all kinds, raw tallow, earthenware jugs and jars, writing inks, common glass for window panes.

VI. The following belong to the sixth class (10 cents per kilogram), viz: Linseed, olive, castor, and almond oils; harmoniums; olives in jars, barrels, or other packing; steel, indigo blue, varnishes, trunks, billiard tables, unworked wax, corks for bottles, manufactured copper or brass, cut glassware, manufactured tin plates or sheets, boot or shoe pegs, manufactured iron ware, tarpaulins for ships, matches, artists' tools, manufactured tinware, oilcloth for floors, musical instruments of more than 1 meter in height, cows' or pigs' lard, butter; furniture of all kinds, complete or in parts; paint in powder, paste, or any other form; manufactured lead, manufactured brass; paper, writing and all other sorts not mentioned; Chinese mats, string and twine of all sorts, candles of all kinds, wines packed in any shape, vinegar, manufactured zinc.

VII. To the seventh class (50 cents per kilogram) belong all kinds of woolen goods and manufactured tobacco.

VIII. To the eighth class (\$1 per kilogram) belong all articles of gold or silver, precious stones, silks; all kinds of goods which contain silk, gold, silver, or threads of silk, gold, or silver; spectacles and eye-glasses of all kinds; ornaments for dresses, shoes, hats, beads, &c.; antimacazares or any other article of net-work or crochet, natural or artificial hair, engravings, manufactured tortoise-shell, rough or manufactured coral, strings for musical instruments, lace, woolen or thread net-work or trimmings, breech-loading guns and revolvers; magic lanterns, &c., and views for same; stereoscopes and views for same, artificial flowers, gloves of all kinds, hammocks of all kinds; printed pictures without frames on paper, linen, &c.; manufactured ivory, fancy goods, hats and caps for ladies.

IX. To the ninth class (25 cents per kilogram) belong all articles not mentioned in the previous eight classes pay 25 cents per kilogram; boots and shoes of all kinds, hats, ready-made clothes, such as shirts, ladies' underwear, gowns, gentlemen's coats, waistcoats, &c., with the exception of rough or ordinary shoes or sailors' boots; undershirts, drawers, and stockings or socks shall pay an increased duty of 25 per cent. above the corresponding duty, according to the quality of the material. The weight of the cases containing fragile goods will be taken with breakages included, without any chance for litigation on the part of the importer. The Ecuadorian consuls at the ports from whence the goods leave shall certify to the manifest or invoice of the goods as presented by the exporters; four copies, all of the same tenor, shall be executed, of which one shall be returned to the shipper, another shall be sent to the administrator of the custom-house of the place to which the cargo is bound, the third to the secretary of the treasury, and the fourth is to be kept among the archives of the consulate. Consuls shall not certify to invoices sent to non-qualified ports of Ecuador.

☞ An additional duty of 20 per cent. on the value of the duty on each article shall be collected on all articles paying import duty.

#### EXPORT DUTIES.

The following articles shall pay, for each 100 kilograms, as follows:

	Sucres or sols.
Cocoa .....	0.64
Coffee .....	0.44
Rubber .....	5.00
Mangle bark .....	0.66
Hides .....	0.50
Orchilla .....	0.50
Straw for hats .....	10.00
Straw for hammocks .....	4.00
Tobacco .....	0.22
Sarsaparilla .....	0.50
Sole leather (each piece) .....	0.10

#### PORT DUES.

All sailing craft entering the ports of Ecuador shall pay on each registered ton the sum of 5 cents of a sucre or sol for light-house dues.

Steamers pay one-half of the above rate.

No craft or vessel of over 30 tons burden can enter or leave by the Guayaquil River without a pilot.



Rates for pilotage are charged according to the draught of the vessel as follows :

	Sols per foot.
Santa Clara to Guayaquil .....	2. 00
Puna to Guayaquil .....	1. 60

Same rate is charged both ways, when entering and leaving.

The captain of port is entitled to the sum of 4 sols from each vessel, national or foreign, arriving from a foreign port. All vessels under 20 tons register, and including those of 20 tons, are exempt from the above port dues.

All vessels must discharge at the wharf, of which the charges per day are :

	Sols.
Vessels of 10 tons or under .....	2. 00
Vessels from 11 tons to 30 .....	5. 00
Vessels from 31 tons to 60 .....	6. 00
Vessels from 61 tons to 100 .....	8. 00
Vessels from 101 tons to 150 .....	10. 00
Vessels from 151 tons to 200 .....	12. 00
Vessels from 201 tons to 300 .....	16. 00
Vessels from 301 tons to 400 .....	18. 00

And all over and of 401 tons pay 6 sols more for each succeeding 100 tons.  
The present law came into effect October 25, 1886.

CONSULATE-GENERAL OF THE UNITED STATES,  
Guayaquil, November 13, 1886.

## TARIFF AND PORT DUES OF CEYLON.

*Schedule of taxes, duties, fees, and all other sources of revenue, specified under the respective laws or authorities under which they are levied.*

[Transmitted by Consul W. Morey.]

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.
<b>CUSTOMS DUTIES.</b>		
<i>Import duties.</i>		
<b>Arms and ammunition :</b>	<i>Rupces.</i>	
Fowling-pieces, guns, rifles, single-barreled..... each	8. 75	} Ordinance No. 39 of 1884.
Fowling-pieces, guns, and rifles, double-barreled, and revolvers, each.	7. 50	
Gunpowder for guns..... per pound.	0. 25	
Gunpowder for blasting..... do.	0. 08	
Pistols, single-barreled..... each	2. 25	
Pistols, double-barreled, and revolvers..... do.	4. 50	} Ordinances No. 17 of 1869. and No. 14 of 1871.
Shot..... per cwt.	0. 75	
Asphalt..... per ton	2. 50	
Bacon, butter, cheese, and hams..... per cwt.	8. 00	
Beef, pork, humps, tongues, salted or corned..... do.	1. 25	
Beer, ale, porter, and all other malt liquors, in wood, per gallon.	0. 13	} Proclamation of 10th November, 1877, and proclamation of 9th January, 1880.
Beer, ale, porter, and all other malt liquors, in bottle, per gallon.	0. 17	
Cement..... per cwt.	0. 17	
<b>Cotton goods:</b>		
Gray shirtings, madapolams, cambrics, jaconets (on an assessed value of 65 cents per pound for every 100 rupees value thereof).	5. 00	
Gray domestics, long cloths, sheetings, tea cloths, (on an assessed value of 55 cents per pound for every 100 rupees value thereof).	5. 00	} Proclamation of 10th November, 1877, and proclamation of 9th January, 1880.
Gray mule twist, Nos 30 to 60 (on an assessed value of 65 cents per pound for every 100 rupees of value thereof).	5. 00	
Turkey-red yarn, Nos. 30 to 80 (on an assessed value of 65 cents per pound for every 1.40 rupees of value thereof), per gray weight.	5. 00	
Other colors, Nos. 30 to 60 (on an assessed value of 75 cents per pound for every 100 rupees of value thereof).	5. 00	

Schedule of taxes, duties, fees, and all other sources of revenue, &amp;c.—Continued.

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.
<b>CUSTOMS DUTIES—continued.</b>		
<i>Import duties—Continued.</i>		
Fish (dried or salted), roes, fins, skins, and blood, the produce of creatures living in the sea, per cwt.	<i>Rupess.</i> 0.50	
Flour (wheat)..... per cwt.	1.00	
Ghee..... do.	2.50	
<b>Metals:</b>		
Brass, sheets, wire, and nails..... do.	3.00	
Copper, sheathing, bars, bolts, ingots, plates, nails, and tacks, per cwt.	3.00	
<b>Iron:</b>		
Bar, flat, square, bolts, or round, rod, and nail-rod, per ton.	4.00	
Angle, Swedish bar, plate, and sheet..... per ton	5.00	
Corrugated..... do.	7.00	Ordinances No. 17 of 1869, and No. 14 of 1871.
Galvanized, viz. guttering, nails, piping, ridging, rivets, sheets, and sheets corrugated, spouting, strapping, screws, tiles, washers, wire..... per ton.	15.00	
Nails and tacks of sorts, and rivets..... per cwt.	0.63	
Pig..... per ton.	2.50	
Lead, sheet, pipe, and pig..... do.	10.00	
Spelter, tin, zinc, in cake or slab..... do.	10.00	
Steel, blister..... do.	10.00	
Steel, cast..... do.	12.50	
Tin plates..... per cwt.	0.75	
Zinc, perforated..... do.	3.00	
Onions..... do.	0.17	
Opium..... per pound.	1.00	Ordinance No. 39 of 1884. Ordinances No. 17 of 1869, and No. 14 of 1871.
Paddy..... per bushel.	0.13	
Peanut..... per cwt.	0.25	
Potatoes..... do.	0.38	Ordinance No. 39 of 1884.
Rice, wheat, gram, peas, beans, and other grain, except paddy, per bushel.	0.29	
Salt..... per cwt.	2.13	Ordinances No. 17 of 1869 and No. 14 of 1871.
Saltpeter..... do.	0.50	
<b>Spirits:</b>		
Liqueurs and cordials under proof..... imperial gallon.	4.00	
Proof and under 10° over..... do.	4.50	
10° over proof and under 20°..... do.	5.00	
20° over proof and under 30°..... do.	5.50	
30° over proof and under 40°..... do.	6.00	
40° over proof and under 50°..... do.	6.50	
50° over proof and under 60°..... do.	7.00	
60° over proof and under 70°..... do.	7.50	Ordinance No. 39 of 1884.
70° over proof and under 80°..... do.	8.00	
80° over proof and under 90°..... do.	8.50	
<b>Sugar:</b>		
Candy and refined..... per hundred weight.	3.00	
Unrefined..... do.	1.75	
Palm and jaggery..... do.	0.75	
<b>Tea..... per pound.</b>	0.25	Ordinances No. 17 of 1869 and No. 14 of 1871.
<b>Tobacco:</b>		
Cigars and snuff..... per pound.	1.00	
Manufactured..... do.	0.25	Ordinance No. 39 of 1884.
Unmanufactured and hooks..... do.	0.12	
<b>Wine:</b>		
Claret in bottle..... per gallon.	1.25	Ordinance No. 17 of 1869 and No. 14 of 1871.
Ginger..... do.	0.50	
Claret in wood..... do.	0.50	
Wines in bottles, except claret and ginger, sparkling. do.	2.50	
Other wines..... do.	1.50	
Wines in wood, except claret..... do.	1.00	
Goods, including methylated spirits and kerosene oil, at present paying 5 per cent. <i>ad valorem</i> duty, shall pay 6½ per cent., except cotton goods, the duty on which shall remain untouched.		Ordinance No. 39 of 1884.
An <i>ad valorem</i> duty of 6½ per cent. shall be charged on the following articles: Acid, beeswax, blacking, boats and canoes, bran, brimstone, brushes, candles, cutch, fuller's earth, ground nuts, images and statuettes, musical instruments, mats, Palmyra rush and rattan matting, oils (linseed and vegetable), pitch and tar, sago, stationery (excluding paper and envelopes).		

*Schedule of taxes, duties, fees, and all other sources of revenue, &c.—Continued.*

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.
<b>CUSTOMS DUTIES—continued.</b>		
<i>Import duties—Continued.</i>		
Table of exemptions: Animals (i. e., horses, mules, asses, neat cattle, and all other live stock), arecanuts, arrowroot, books and maps (printed), bricks and tiles, bullion, coin, pearl oysters, pearls, and precious stones, unset, cardamoms; casks (empty), shoofs, and staves; castor-seed ponnac, coal, coke, and patent fuel; cocoanuts and coconut oil; coffee; coir yarn, rope, junka, fiber, twine, and strands; copperah, cotton wool, cowries and shells (not tortoise-shell), dammer, drawings and drawing materials, felt, fruits (fresh and not in any way preserved), grindstones, gunnies and gunny-cloth, hay and straw, hoop-iron, hops, horns, ice, instruments (scientific, surgical, &c.), jute, lime, and clay.		
<b>MACHINERY.</b>		
Agriculture and agricultural produce: Machinery for the manufacture of oil and sugar; pulpers; peelers, sizera, winnowing, threshing, corn-mill, and flour-dressing machinery; chaff-cutters, mowing-machines, plows, plowing-machines, tea-rolling machines, and sieves.	Free.	
Building and sanitary purposes: Machinery for the manufacture of bricks, tiles, and drain-pipes; dredging and pile-driving machinery.	Free.	
Cranes, presses, &c.: Hydraulic, screw, lever, or cam presses; cranes, derricks, crab-winches, screw, and other jacks.	Free.	
Forge and foundry machinery: Steam, tilt, lift, and pneumatic hammers; forging machines; smithy or foundry fans, blowing machines, and iron-work for reverberatory furnaces and cupolas.	Free.	
Gas: Retorts, gas mains, hydraulic mains, purifiers, condensers, gas-holders, hydraulic valves, gas-meters, pressure-gauges.	Free.	
Machinery for fibrous substances and textile fabrics: Cotton-gins, openers, scutchers, lap-machines, carding-engines, drawing-frames, slubbing-frames, rovers, throstles, self-acting mules, spinning-jennies, burring machines, teasing, condensing, fiber machines, hackling machines, balling engines, spreaders, towlap or cop-winding machines, rope-machines, silk-winding, spinning, sizing, doubling, throwing, fiber machines; hand, power, and jacquard looms, knitting machines; calendars.	Free.	Ordinances No. 17 of 1869. No. 14 of 1871, and notification of 23d May, 1879, and ordinance No. 8 of 1885.
Mill-work: All shafting, drums, machine-pulleys and belting, wall-boxes, hangers, brackets, plummer-blocks, brasses and bushes, spur, miter, bevel, and friction gearing; geared horse-works, either for horses or adapted to other animals, with all fittings and connections for transmitting power to machinery.	Free.	
Mining, &c.: Ore-crushing, stamping, washing, and separating machinery; stone-breaking machines, and machinery for tunnels or perforating rock.	Free.	
Paper and printing: Printing and lithographic presses; type and type machinery; machinery used in the preparation and manufacture of paper.	Free.	
Prime movers: Windmills, water-wheels, water-pressure engines, turbines, and other hydraulic motors; all descriptions of marine, locomotive, stationary, and portable steam engines, pneumatic, atmospheric, and magneto-electric engines, their boilers, generators, fittings, connections, and gearing, also machinery for lifting, forcing, conducting, or storing water.	Free.	
Railway: Traversers, turn-tables, railway and cart-weighting machines, points, crossings fittings, couplings, wheels, axles, axle-boxes, and iron-work for railway carriages, rails (temporary and permanent), spring buffers.	Free.	
Workshop: Punching, shearing, plate-bending, plate-cutting, riveting, drilling, boring, planing, shaping, slotting, screw-making, sawing, tenoning, mortising, moulding, rebating, tonguing and grooving machines, lathes, file-cutting, carving, engraving, bolt-making, rivet-making, and washer-making machines.	Free.	
Sundries: Machinery for the manufacture of fish, guano, or other manures, bone-crushing and peat-compressing machinery; machines for the manufacture of casks; machinery for the manufacture and brewing of beer.	Free.	
All the machinery above stated either whole or in parts.		

*Schedule of taxes, duties, fees, and all other sources of revenue, &c.—Continued.*

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.
<b>MACHINERY—continued.</b>		
Manures of all sorts, and ingredients imported solely for the manufacture of manures, and certified as such by the importer.	Free.	
Manuscripts	Free.	
Nets, fishermen's	Free.	
Oil, the produce of creatures living in the sea.	Free.	
Olas	Free.	
Orchilla weed	Free.	
Paper and envelopes	Free.	
Passengers' baggage, viz: Wearing apparel, and instruments intended for the professional use of, and accompanying passengers.	Free.	
Plants, trees, and seeds, intended for agricultural and horticultural purposes.	Free.	
Plumbago	Free.	
Printing materials	Free.	
Prints and pictures	Free.	
Rattan	Free.	
Resin	Free.	
Regimental clothing, uniforms, necessities, accouterments, and band instruments, imported for the use of Her Majesty's land and sea forces.	Free.	
Salt-peter, refuse of, for purposes of manure only, as certified by the importer.	Free.	
Seeds: Cotton, castor, rape, poppy, niger, mustard, and bird.	Free.	
Senna leaves	Free.	
Slates, roofing	Free.	
Specimens and objects illustrative of natural history	Free.	
Stones:		
Ballast	Free.	
Coral	Free.	
Grinding	Free.	
Tomb and tablets	Free.	
Of sorts	Free.	
Tallow and grease	Free.	
Tanks, iron	Free.	
Tea lead	Free.	
Timber	Free.	
Woods: Dye, sandal, and of sorts	Free.	

Ordinances No. 17 of 1839,  
No. 14 of 1871, and notification of 23d May, 1879,  
and ordinance No. 8 of 1885.

**TABLE OF PROHIBITIONS AND RESTRICTIONS INWARDS.**

Ammunition, arms, gunpowder, and utensils of war by way of merchandise, except by license from Her Majesty, for furnishing Her Majesty's public stores only, or under the directions of the collector by authority of the governor.

Books wherein the copyright shall be first subsisting, first composed, or written or printed in the United Kingdom, and printed or reprinted in any other country, and of which notice that copyright subsists shall have been given by the proprietor to the commissioner of customs, London.

Coin, viz, false money, or counterfeit sterling coin of the realm, or any money purporting to be such, not being of the established standard in weight or fineness.

Dangerous substances, viz, earth, oil, or mineral naphthas, fulminating powder, gun-cotton, nitro-glycerine, except by license of the governor, and under regulations to be made by the governor, with the advice of the executive council, from time to time, for the safe landing and deposit thereof.

Indecent or obscene prints, paintings, books, cards, lithographs, photographs, engravings, or any other indecent or obscene articles.

Infected cattle, sheep, or other animals; also hides, skins, horns, hoofs, or any part of cattle or other animal, which the governor may by proclamation prohibit, in order to prevent contagious distemper.

Fish, grain, and other articles in a damaged, stinking, offensive condition, unfit for food and legitimate use, and likely to breed sickness or any contagious disorders.

Parts of articles, viz, any distinct or separate part of any article not accompanied by the other part, or all the other parts of such articles, so as to be complete or perfect, if such articles be subject to duty according to the value thereof.

Ordinances No. 17 of 1860,  
and No. 14 of 1871.

**EXPORT DUTIES.**

	Rupees.	
Royalty on plumbago..... per cwt..	0. 25	Ordinance No. 22 of 1877.
Royalty on elephants..... per head..	100. 00	Proclamation 27th July, 1882.

\* Rebate of duty on goods imported or supplied for the public use of Her Majesty's troops. Ordinance No. 5 of 1884.

*Schedule of taxes, duties, fees, and all other sources of revenue, &c.—Continued.*

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.
<b>EXPORT DUTIES—continued.</b>		
No elephants can be shipped for export without the production of a permit for their removal from the district in which the elephants have been captured.	<i>Rupees.</i>	Notification of 7th August, 1884.
10 cents per cwt. on all coffee, tea, and cocoa, and 20 cents per cwt. on all cinchona exported.		Ordinance No. 9 of 1882, clause 4, and proclamation of 12th January, 1884.
<b>PORT DUES.</b>		
<b>I.—DUES LEVIABLE AT THE PORT OF COLOMBO.</b>		
<i>Dues payable by ships entering the port.</i>		
Up to 50 tons .....	2. 50	
Over 50 and up to 100 tons .....	5. 00	
Over 100 and up to 150 tons .....	7. 50	
Over 150 and up to 200 tons .....	10. 00	
Over 200 and up to 300 tons .....	20. 00	
Over 300 and up to 400 tons .....	30. 00	
Over 400 and up to 500 tons .....	40. 00	
Over 500 and under 700 tons .....	50. 00	
Over 700 and under 900 tons .....	60. 00	
Over 900 and under 1,100 tons .....	70. 00	
Over 1,100 and under 1,300 tons .....	80. 00	
Over 1,300 and under 1,500 tons .....	90. 00	
Over 1,500 and under 1,800 tons .....	100. 00	
Over 1,800 tons .....	120. 00	
These dues to clear a vessel inwards and outwards, providing her stay in the port does not exceed 96 hours.		
If exceeding 96 hours and not exceeding 288 hours, one-half of the scale to be added.		
If exceeding 288 hours, to pay the same rate outwards as paid inwards.		
The above rates to be applicable to all vessels, whether steamers, sailing vessels, or native craft.		
<i>Dues payable by ships discharging or loading cargo.</i>		
Twelve and a half cents per ton upon all cargo discharged or loaded by vessels up to 200 tons register.		
Twenty-five cents per ton upon all cargo discharged or loaded by vessels above 200 tons register.		
Cargo brought to the port for transshipment to be free of dues under this heading, if not landed, or if landed and not entered for duty.		
Live stock: Cattle, 1 rupee per head; horses, 5 rupees per head; sheep and goats, 20 cents per head.		
Vessels of 300 tons and under to be allowed to land or ship 5 tons of cargo free.		
Vessels over 300 tons to be allowed to land or ship 10 tons free.		
Coal to pay 25 cents a ton inwards only.		
<i>Dues payable on imports.</i>		
Each butt, pipe, or puncheon, for 5 days .....	0. 50	
Half-pipe or hogahead, for 5 days .....	0. 25	
Barrel or quarter-cask, for 5 days .....	0. 15	
Cask or keg of smaller size, and empty cask, for 5 days .....	0. 10	
Crate, cask, or case of hardware, earthenware or ironmongery, for 5 days .....	0. 25	
Bale, case, or box measuring—		
Sixty cubic feet or upwards, for 5 days .....	0. 25	
Forty cubic feet and under 60 cubic feet, for 5 days .....	0. 20	
Twenty-five cubic feet and under 40 cubic feet, for 5 days .....	0. 15	
Fifteen cubic feet and under 25 cubic feet, for 5 days .....	0. 12	
Ten cubic feet and under 15 cubic feet, for 5 days .....	0. 08	
Five cubic feet and under 10 cubic feet, for 5 days .....	0. 06	
Each small box or package, for 5 days .....	0. 04	
Bag of rice or sugar, for 5 days .....	0. 04	
Beer, wine, or spirits in bottle, per dozen quarts, for 5 days .....	0. 04	
Colr yarn or rope, in ballot or bundles, per hundred, for 5 days .....	0. 05	
Manure, in bags or casks, per ton, for 5 days .....	0. 25	
Heavy goods, such as metal or timber, per ton, for 5 days .....	0. 25	
Other goods of like size or weight to be charged in proportion to these rates.		
These rates to admit of goods remaining at the wharf for a term not exceeding five days, of which the day of receipt and the day of removal shall each count as one day. Thereafter		

Ordinance No. 6, of 1875, clause 6, and proclamations of 7th November, 1882, and 6th May, 1885.

*Schedule of taxes, duties, fees, and all other sources of revenue, &c.—Continued.*

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.
PORT DUES—continued.		
I.—DUES LEVIABLE AT THE PORT OF COLOMBO—Continued.		
Dues payable on imports—Continued.		
an additional similar rate to be charged for each succeeding five days, or part thereof. Provided that in the case of goods landed for transshipment and not entered for duty, if shipped within five days from the date of landing, they shall be free of duty under this heading; if not shipped within five days, and warehoused in a bonded warehouse, or in other warehouse than the usual landing warehouses, only one rate shall be chargeable, but if allowed to remain in the landing warehouses the cumulative rate will be levied after the first five days, which in all cases of transshipment goods will be allowed free.	Rupess.	
Coastwise goods brought for transshipment or reshipment, not being through cargo, shall, if landed, pay both import and export dues; if transhipped without being landed, they shall only be liable to export dues.		
Dues payable on exports.		
Each leaguer, pipe, or cask of like size, for 5 days .....	0.25	Ordinance No. 6 of 1875, clause 8, and proclamations of 7th November, 1882, and 6th May, 1885.
Hogshead or cask of like size, for 5 days .....	0.12	
Cask or barrel of coffee not weighing more than 3 cwt. gross, for 5 days .....	0.06	
Cask weighing more than 3 cwt. and less than 7 cwt., for 5 days .....	0.08	
Cask weighing more than 7 cwt., for 5 days .....	0.12	
Barrel of plumbago, for 5 days .....	0.07	
Each bale, case, or package measuring—		
60 cubic feet and upwards, for 5 days .....	0.25	
40 cubic feet and under 60 cubic feet, for 5 days .....	0.20	
25 cubic feet and under 40 cubic feet, for 5 days .....	0.15	
15 cubic feet and under 25 cubic feet, for 5 days .....	0.12	
10 cubic feet and under 15 cubic feet, for 5 days .....	0.08	
5 cubic feet and under 10 cubic feet, for 5 days .....	0.06	
Smaller box or package, for 5 days .....	0.02	
Bag of coffee, for 5 days .....	0.04	
Other goods of like size or weight to be charged in proportion to these rates.		
Coff goods in ballots or bundles, per cwt., for 5 days .....	0.04	
Cocoanuts, in bag or loose, per 100, for 5 days .....	0.04	
These rates to admit of goods remaining at the wharf for a term not exceeding five days, of which the day of receipt and the day of removal shall each count as one day. Thereafter an additional similar rate to be charged for each succeeding five days or part thereof.		
II.—PORT DUES LEVIABLE AT ALL PORTS EXCEPT COLOMBO.		
Port dues shall be leviable and payable for entry inwards, and for clearance outwards, on all ships arriving at, or departing from, any part of this island (except Colombo), according to the following table. Provided always, that when a vessel has paid port dues inwards or outwards, she shall not be liable for additional port dues for goods carried coastwise during the same voyage:		
Port dues leviable at per ton burden.		
On entry inwards with cargo, or with passengers, exceeding one person for every 2 tons .....	0.08	
On clearing outward with cargo, or with passengers, exceeding one person for every 2 tons of burden .....	0.08	
In the case of mail steamers, of whatever tonnages, the dues either inwards or outwards are not to exceed .....	50.00	
Composition for port dues.		
Vessels conveying goods between one port and another within the island are allowed to compound for port dues for 12 months .....	00.50	Ordinances No. 17 of 1869, and No. 14 of 1871.
Exemptions.		
On entry inwards in ballast or with cargo reported for exportation, and the vessels leave the port without breaking bulk or landing passengers, exceeding one person for every 2 tons .....	Free.	
On clearance in ballast or with the original cargo, if the vessel leaves the port without shipping goods or passengers exceeding one person for every 2 tons of burden .....	Free.	
Ships of 250 tons and upward, not being mail steamers, landing cargo not exceeding 10 tons and shipping cargo not exceeding 10 tons .....	Free.	

*Schedule of taxes, duties, fees, and all other sources of revenue, &c.—Continued.*

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.	
<b>WAREHOUSE RENT.</b>			
	<i>Rupees.</i>		
Warehouse rent shall be payable on all goods lodged in any Queen's warehouse, warehouse, or other place of deposit provided by Government, for all such time as the same shall remain in such warehouse, at such rates and under such regulations as may from time to time be fixed by the governor; and no goods upon which warehouse rent is due shall be removed until the same be paid.			
<b>TABLE OF WAREHOUSE RATES.*</b>			
<b>I.—IMPORTS.</b>			
Queen's warehouse single rates, under the provisions of clause 27.			
Each butt, pipe, or puncheon, for a week .....	0.50	Ordinance No. 17 of 1869 and notification of 20th October, 1876.	
Each half-pipe or hoghead, for a week .....	0.25		
Each barrel or quarter cask, for a week .....	0.15		
Each cask, or keg of smaller size, for a week .....	0.10		
Each crate, cask, or case of hardware, earthenware, or ironmongery, for a week .....	0.25		
Bale, case, or box measuring—			
60 cubic feet or upwards, for a week .....	0.25		
40 cubic feet and under 60, for a week .....	0.20		
25 cubic feet and under 40, for a week .....	0.15		
15 cubic feet and under 25, for a week .....	0.12		
10 cubic feet and under 15, for a week .....	0.08		
5 cubic feet and under 10, for a week .....	0.06		
Small box or package, for a week .....	0.04		
Bag of rice or sugar, for a week .....	0.04		
Beer, wine, or spirits, in bottles, per dozen quarts, for a week .....	0.04		
Coir yarn or rope, in ballots or bundles, per cwt., for a week .....	0.05		
Heavy goods, such as metal or timber, per ton, for a week .....	0.25		
1. Other goods of like size or weight to be charged in proportion to these rates.			
2. Goods left on the quay, half the above rates; but manure will be charged full rates.			
3. Goods may remain in the customs warehouses free of rent for three days, exclusive of Sundays and holidays, after which, as provided by the 27th clause, they will be subject to double the above rates. A week's rent will be charged for all fractions of a week.			
<b>II.—BONDED WAREHOUSES.</b>			
The following rates will be charged on all goods warehoused in the bonded warehouses:			
Rent will commence on the day the goods are deposited therein, and a week's rent will be charged on all fractions of a week.			
Butt, pipe, or puncheon, for a week .....	0.40	Ordinance No. 17 of 1869 and notification of 20th October, 1876, and 6th July, 1877.	
Half pipe or hoghead, for a week .....	0.20		
Barrel or quarter-cask, for a week .....	0.12		
Octave, or cask of like size, for a week .....	0.08		
Crate, cask, or cases of hardware, earthenware or ironmongery, for a week .....	0.20		
Bale, case, or package measuring—			
60 cubic feet or upwards, for a week .....	0.20		
40 cubic feet and under 60, for a week .....	0.16		
25 cubic feet and under 40, for a week .....	0.12		
15 cubic feet and under 25, for a week .....	0.08		
10 cubic feet and under 15, for a week .....	0.06		
5 cubic feet and under 10, for a week .....	0.04		
Smaller box or package, for a week .....	0.02		
Bag of sugar, for a week .....	0.04		
Iron or other heavy goods in bulk, per ton, for a week .....	0.20		
Beer, wine, or spirits, per dozen quarts, for a week .....	0.01		
<b>III.—EXPORTS.</b>			
The following rates will be charged on all goods brought for shipment. Such goods will be allowed three clear days free of rent, and rent will not be charged until the fifth day, after which they will become liable to the payment of a daily rent. Goods brought for shipment, but removed without being shipped, shall be liable to rent from and for the day on which they are brought; but no rent shall be charged for goods			
* The Queen's bonded warehouses have been leased to the "Wharf and Warehouse Company, limited." (See ordinance No. 10 of 1876.)			

\* The Queen's bonded warehouses have been leased to the "Wharf and Warehouse Company, limited." (See ordinance No. 10 of 1876.)

*Schedule of taxes, duties, fees, and all other sources of revenue, &c.—Continued.*

Specification of taxes, duties, &c.	Rate.	Act of colonial legislature under which levied.
III.—EXPORTS—Continued.		
	Rupees.	
brought to the wharf and returned on the same day, nor for days on which the master attendant hoists the storm flag:		
Leagner, pipe, or cask of like size, for a day.....	0.25	
Hogshead, or cask of like size, for a day.....	0.12	
Cask or barrel of coffee, not weighing more than 8 cwt. gross, for a day.....	0.06	
Cask or barrel of coffee weighing more than and less than 7 cwt., for a day.....	0.06	
Cask or barrel of coffee weighing more than 7 cwt., for a day.....	0.12	
Barrel of plumbago, for a day.....	0.07	Ordinance No. 17 of 1869, and notifications of 20th October, 1876, and 6th July, 1877.
Bale, case, or package measuring—		
60 cubic feet and upwards, for a day.....	0.25	
40 and under 60 cubic feet, for a day.....	0.20	
25 and under 40 cubic feet, for a day.....	0.15	
15 and under 25 cubic feet, for a day.....	0.12	
10 and under 15 cubic feet, for a day.....	0.08	
5 and under 10 cubic feet, for a day.....	0.06	
Smaller box or package, for a day.....	0.03	
Bag of coffee, for a day.....	0.04	
Coir goods in ballots or bundles, per cwt., for a day.....	0.04	
PILOTAGE.		
Rates of pilotage payable by all square-rigged vessels, sloops, or schooners at the ports of Colombo, Trincomalee, and Galle.		
COLOMBO.—All vessels over 200 tons entering the port of Colombo shall pay pilotage at the following rates, which shall cover them both inwards and outwards:		
200 tons to 399 tons.....	15.00	Ordinance No. 6 of 1865, and proclamation of 12th June, 1884.
400 tons to 599 tons.....	20.00	
600 tons to 799 tons.....	25.00	
800 tons and upwards.....	30.00	
Vessels under 200 tons, if they take or apply for a pilot.....	10.00	
Vessels liable to pay pilotage shall, on entering and leaving the port in charge of a pilot between the hours of 6 p. m. and 6 a. m., pay, in addition to the above rates, an extra fee of 10 rupees, half of which shall go to the pilot and half to the boat's crew.		
TRINCOMALEE.—All vessels above 200 tons burden arriving within the inner harbor of Trincomalee, as defined in proclamation, 7.50 rupees inwards and outwards. The above rate of pilotage is also chargeable to all vessels taking a pilot, whether they anchor within the harbor or not, but for the back bay anchorage the charge is payable only if the vessel make a signal and the pilot actually repair on board.		
Proclamation of 7th June, 1880.		
GALLE.		
Vessels of 600 tons and upwards.....	30.00	Proclamation dated 7th February, 1880.
Vessels of 400 and under 600.....	22.50	
Vessels of 200 and under 400.....	15.00	
Vessels of 100 and under 200.....	11.25	
Vessels of under 100.....	7.50	
The above rates of pilotage are charged on all vessels arriving within the inner harbor of Trincomalee, inwards or outwards, and on all vessels entering or leaving the port of Galle, whether they make a signal for a pilot or not. In the back bay of Trincomalee the charge is only made if the vessels make the signal and the pilot actually repair on board.		
The following port rule is applicable to all the ports in the island: No licensed boat or ship's boat other than those actually engaged in landing or shipping coals shall be allowed to communicate with the shore within the limits of the port, except at the authorized jetties within the customs premises, unless specially authorized by the master attendant or the collector of customs.		
Proclamation of 11th September, 1884.		



*Schedule of taxes, duties, fees, and all other sources of revenue, &c.—Continued.*

Specification of taxes, duties, &c.		Rate.	Act of colonial legislature under which levied.
<i>Boat hire for cargo and passenger boats.</i>			
COLOMBO.—FOR CARGO.		<i>Rupees.</i>	
Rates per trip.			
Size of boat.	Between the wharves and vessels in the harbor, within a line drawn due east from the end of the breakwater.	Between the wharves and vessels outside the harbor, and within a radius of half a mile from the end of the breakwater.	
	<i>Rupees.</i>	<i>Rupees.</i>	
20 to 25 tons ..	7.00	10.00	
15 to 20 tons ..	5.00	7.50	
9 to 15 tons ..	3.50	5.00	
6 to 9 tons ..	2.50	4.00	
4 to 6 tons ..	2.00	3.00	
3 to 4 tons ..	1.50	2.50	
1½ to 3 tons ..	1.00	1.50	
<p><i>Note.</i>—Boats over 25 tons at proportionate rates.  Transhipment per trip, same rates as above, with an additional half for the first trip.  The above rates apply to any day between the hours of 5 a. m. and 6 p. m., during ordinary weather.  Between 6 p. m. and 9 p. m., half rates may be added, and between 9 p. m. and 5 a. m., double rates may be charged.  During extraordinary weather, parties disputing rates of boat hire may refer to the master attendant, whose decision shall be considered final.  To vessels lying beyond a radius of half a mile outside of the end of the breakwater, and within a radius of 1 mile, one-half of the rates may be added, and beyond this limit parties should make their own arrangements.  Boats detained alongside more than one hour, one-third rates may be added for every hour or portion of an hour's detention thereafter.</p>			
<i>For passengers.</i>			
		Rates per trip.	
Size of boat.	Number of passengers allowed to carry.	Between the wharves and vessels in the harbor, within a line drawn due East from the end of the breakwater.	Between the wharves and vessels outside of the harbor, and within a radius of half a mile from the end of the breakwater.
<i>Tons.</i>		<i>Rupees.</i>	<i>Rupees.</i>
20 to 25	40 troops or 70 coolies	7.00	10.00
15 to 20	35 troops or 60 coolies	5.00	7.50
9 to 15	30 troops or 50 coolies	3.50	5.00
6 to 9	20 troops or 35 coolies	2.50	4.00
4 to 6	10 first-class 25 coolies	2.00	3.00
3 to 4	8 first-class 20 coolies	1.50	2.50
1½ to 3	5 first-class 15 coolies	1.00	1.50
Canoe ..	2 first-class 3 coolies	0.50	0.75

Proclamation dated 2d September, 1881.

## TARIFF OF CANADA.

*Certified copy of a report of a committee of the honorable the privy council of Canada, approved by his excellency the governor-general, in council, on the 24th day of November, 1886.*

The committee of the privy council having had their attention called by a telegram, dated 18th November instant, from Her Majesty's minister at Washington, to his former dispatch of the 28th October ultimo, inclusing a copy of a note from the honorable Mr. Bayard, and the inclosures, asking for authentic information respecting the Canadian laws regulating the sale and exportation of fresh herring from the Grand Manan Island.

The minister of marine and fisheries, to whom said dispatch was referred for early report, states that any foreign vessel "not manned nor equipped, nor in any way prepared for taking fish," has full liberty of commercial intercourse in Canadian ports upon the same conditions as are applicable to regularly registered foreign merchant vessels; nor is any restriction imposed upon any foreign vessel dealing in fish of any kind different from those imposed upon foreign merchant vessels dealing in other commercial commodities.

That the regulations under which foreign vessels may trade at Canadian ports are contained in the customs laws of Canada (a copy of which is herewith), and which render it necessary, among other things, that upon arrival at any Canadian port a vessel must at once enter inward at the custom-house, and upon the completion of her loading, clear outwards for her port of destination.

The committee recommend that your excellency be moved to transmit a copy of this minute, together with a copy of the customs laws, as containing authentic information respecting Canadian laws regulating the sale and exportation of fresh herring, to Her Majesty's minister at Washington, for the information of the honorable Mr. Bayard, Secretary of State for the United States.

JOHN J. MCGEE,  
Clerk, Privy Council.

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FORTY-SEVEN VICTORIA, CHAP. 29.

AN ACT to amend the customs act, 1883. Assented to April 19, 1884.

Her Majesty, by and with the advice and consent of the senate and house of commons of Canada, enacts as follows:

1. Section 188 of "the customs act, 1883," is repealed and the following section enacted in lieu thereof:

"188. All penalties and forfeitures incurred under this act or any other law relating to the customs or to trade or navigation, may, in addition to any other remedy provided by this act or by law, be prosecuted, sued for and recovered with full costs of suit, in the exchequer court of Canada, or in any superior court or court of vice-admiralty, having jurisdiction in that province in Canada where the cause of prosecution arises, or wherein the defendant is served with process; and if the amount of any such penalty or forfeiture does not exceed \$200, the same may, in the Provinces of Ontario, Quebec, New Brunswick, Nova Scotia, British Columbia, Manitoba, and Prince Edward Island, respectively, also be prosecuted, sued for, and recovered in any court having jurisdiction in the place where the cause of prosecution arises, or where the defendant is served with the process."

2. Section 153 of the said act is repealed and the following section enacted in lieu thereof:

"153. If any person, with intent to defraud the revenue of Canada, smuggles or clandestinely introduces into Canada any goods subject to duty, or makes out, or passes, or attempts to pass through the custom-house any false, forged, or fraudulent invoice, or in any way attempts to defraud the revenue by evading the payment of the duty, or of any part of the duty on any goods, such goods shall be seized and forfeited; and every such person, his aiders and abettors, shall, in addition to any other penalty or forfeiture to which he and they may be subject for such offense, be liable, on conviction, to a penalty of not less than \$50 and not more than \$200, or to imprison-

ment for a term not less than one month nor more than one year, or to both fine and imprisonment within the said limits; and such conviction may be had in a summary manner, before any two justices of the peace or before any judge or magistrate having the powers of two justices of the peace."

3. Section 86 of the said act is hereby repealed.

4. This act shall be construed as part of the act amended by it, but its provisions, so far as they differ from those for which they are substituted, shall apply not only to cases in which the offense has been committed, but also to those in which the prosecution for the penalty or forfeiture thereby incurred is commenced after the passing of this act, although the offense was committed before the passing thereof.

#### FORTY-SIX VICTORIA, CHAP. 12.

AN ACT to amend and consolidate the acts respecting the customs. Assented to 25th May 1883.

Her Majesty, by and with the advice and consent of the senate and house of commons of Canada, enacts as follows:

1. This act may be cited as "the customs act, 1883."

2. This act shall be construed as being passed in amendment and consolidation of the act passed in the fortieth year of Her Majesty's reign (A. D. 1877), entitled "An act to amend and consolidate the act respecting the customs," and of any act amending the same.

3. This act shall come into force upon, from, and after the day of the passing thereof, and upon, from, and after the said day the acts and part of acts mentioned in the schedule hereto, and all acts, enactments, or provisions of law inconsistent with this act, or making any provision for any matter provided for by this act, are hereby repealed, and this act is substituted for them; provided always, that all acts or enactments repealed by any of the said acts shall remain repealed, and that all orders in council and regulations made under the acts hereby repealed, or under any former act relating to customs, so far as the same have not been revoked, or are not inconsistent herewith, shall remain in force until revoked or altered by competent authority; and all things lawfully done, and all obligations incurred, bonds given, duties accrued, and rights acquired under the said acts, or any of them, shall remain valid and may be enforced, and all offenses committed, penalties, forfeitures, or liabilities incurred under them, or any of them, may be prosecuted, punished, and enforced, and all proceedings and things lawfully commenced under them, or any of them, may be continued and completed under the said acts, or under corresponding provisions of this act, which shall not be construed as new law, but as a consolidation and continuation of the said repealed acts, subject to the amendments and new provisions hereby made. Anything heretofore done, or any offense committed or liability incurred under any provisions of any of the said repealed acts, which is repeated without material alteration in this act, may be alleged or referred to as having been done, committed, or incurred under the repealed act in which such provision was made, or under this act; and every such provision shall be construed as having had and as having the same effect, and from the same time, as under such repealed act, and any reference in any former act or document to any such provision in any of the said repealed acts, may hereafter be construed as a reference to the corresponding provision of this act.

4. The following terms and expressions wherever used in this act, or in any other laws relating to the customs, shall, unless it be otherwise specially provided, or there be something in the context repugnant to or inconsistent with such construction, be construed and interpreted as follows: The word "port" means a place where vessels or vehicles may discharge or load cargo; the word "collector" means the collector of the customs at the port or place intended in the sentence, or any person lawfully deputed, appointed, or authorized to do the duty of collector thereat; the word "officer" means an officer of the customs; the word "vessel" means any ship, vessel, or boat of any kind whatever, whether propelled by steam or otherwise, and whether used as a sea-going vessel or on inland waters only, unless the context be manifestly such as to distinguish one kind or class of vessel from another, and the word "vessel" includes "vehicle"; the word "vehicle" means any cart, car, wagon, carriage, barrow, sleigh, or other conveyance of what kind soever, whether drawn or propelled by steam, by animals, by hand or other power, and includes the harness or tackle of the animals, and includes also the fittings, furnishings, and appurtenances of the vehicle; the word "master" means the person having or taking charge of any vessel or vehicle; the word "conductor" means the person in charge or having the chief direction of any railway train; the words "owner," "importer," or "exporter,"

mean the owners, importers, or exporters, if there be more than one in any case, and include persons lawfully acting on their behalf; the word "goods" means goods, wares, and merchandise, or movable effects of any kind, including carriages, horses, cattle, and other animals, except where these latter are manifestly not intended to be included by the said word; the word "warehouse" means any place, whether house, shed, yard, dock, pond, or other place in which goods imported may be lodged, kept, and secured without payment of duty; "customs warehouse" includes sufferance warehouse, bonding warehouse, and examining warehouse; the word "oath" includes declaration and affirmation. The use of the terms "seized and forfeited," "liable to forfeiture," or "subject to forfeiture," or other term which might of itself imply that some act subsequent to the commission of the offense is necessary to work the forfeiture, shall not be construed as rendering any such subsequent act necessary, but the forfeiture shall accrue at the time of and by the commission of the offense, in respect of which the penalty of forfeiture is imposed. All the terms and provisions of this act, or of any such law as aforesaid, shall receive such fair and liberal construction and interpretation as will best insure the protection of the revenue and the attainment of the purpose for which this act or such law was made, according to its true intent, meaning, and spirit.

5. The following provisions of this act shall apply to all duties of customs imposed by any act of the Parliament of the Dominion of Canada, whether now in force or passed in the present session or in any future session of the said Parliament.

6. On each and every non-enumerated article which bears a similitude, either in material, quality, or the use to which it may be applied, to any enumerated article chargeable with duty, the same rate of duty shall be payable which is charged on the enumerated article which it most resembles in any of the particulars before mentioned.

7. If any non-enumerated article equally resembles two or more enumerated articles on which different rates of duty are chargeable, the duty on such non-enumerated article shall be the same as that on the enumerated article which it resembles, paying the highest duty.

8. On all articles manufactured from two or more materials, the duty shall be that charged on the article (if there be a difference of duty) which is charged with the highest duty.

9. If an article be enumerated in the tariff under two or more names or descriptions, and there be a difference of duty, the highest duty provided shall be charged and collected thereon.

10. Spirits and strong waters, from whatever substance distilled or prepared, having the flavor of any kind of spirits or strong waters, subject to a higher duty than whisky, shall be liable to the duty imposed on spirits or strong waters of which they have the flavor.

11. Inasmuch as disputes may arise as to whether any or what duty is payable on particular goods, therefore when there is no decision in the matter by any competent tribunal, or there are decisions inconsistent with each other, the governor in council may declare the duty payable on the kind of goods in question, or that such goods are exempt from duty; and any order in council containing such declaration and fixing such duty (if any) and published in the Canada Gazette, shall, until otherwise ordered by Parliament, have the same force and effect as if such duty had been fixed and declared by law; and a copy of the said Gazette containing a copy of any such order shall be evidence thereof.

12. All duties, penalties, or forfeitures imposed by any act relating to the customs shall be payable in money, being a legal tender, at such rate as that \$4.86½ of such money shall be of equal value with the British sovereign or pound sterling; and all such duties shall be paid and received according to the weights and measures established by statute in that behalf:

(2) All invoices of goods shall be made out in the currency of the country whence the goods are imported, and shall contain a true statement of the value of such goods; and in computing the value for duty of such currency, the rate thereof shall be such as has been ordered and proclaimed from time to time by the governor in council, who is hereby empowered to make such order; and the rate ordered shall be based upon the actual value of the standard coins or currency of such country as compared with the standard dollar of Canada in so far as such comparative values are known; and in all cases wherein the value of a currency has not been proclaimed, or where there is no fixed standard value, or wherein from any cause the value of such currency has become depreciated, then there shall be attached to the invoice of the goods imported the certificate of some consular resident in such place or country, showing the extent of such depreciation, or the true value of the currency in which such invoice is made out, then and there, as compared with the standard dollar of Canada; provided, however, that in cases where the value of a depreciated currency is dependent upon the rate of exchange on London, it shall be optional with the importer, with the consent of collector of customs, to compute the value for duty at the rate of exchange

certified by the bank through which drawn, as current at the time and place when and whence the goods were exported to Canada; provided further, that when the currency value is so determined at the time of entry, either by a consul's certificate, or by the certificate of the bank as above provided, such rate or value shall be final and not open to any readjustment by reason of the subsequent production of any certificate not corresponding in rate or value with that adopted.

13. In all cases wherein the duties are imposed according to any specific quantity or to any specific value, the same shall be deemed to apply in the same proportion to any greater or less quantity or value, and to any fractional part of such specific quantity.

14. The duties imposed by any act relating to the customs shall be held to be duties within the meaning of the act of the Parliament of Canada, entitled "An act to provide for the better auditing of the public accounts," and of any act of the said Parliament amending the same, and shall, with all matters and things thereunto relating, be subject to the provision of the said act or acts, and to the regulations and orders of the governor in council, made or to be made under the authority thereof, in so far as the same are not inconsistent with this act; and all moneys arising from such duties, or from any penalties hereby imposed, and belonging to Her Majesty, shall be paid over by the officer receiving the same to the receiver-general, and shall form part of the consolidated revenue fund of Canada.

15. The true amount of customs duties payable to Her Majesty with respect to any goods imported into Canada or exported therefrom, and the additional sum (if any) payable under section 102 of this act, shall, from and after the time when such duties should have been paid or accounted for, constitute a debt due and payable to Her Majesty, jointly and severally, from the owner of the goods at the time of the importation or exportation thereof, and from the importer or exporter thereof, as the case may be; and such debt may at any time be recovered with full costs of suit in the exchequer court of Canada, or in any provincial court having jurisdiction in cases of debt to the amount claimed.

16. No goods shall be unladen from any vessel arriving at any port or place in Canada from any place out of Canada, nor from any vessel having dutiable goods on board brought coastwise, nor shall bulk be broken within 3 leagues of the coast until due entry has been made of such goods, and warrant granted for the unloading of the same; and no goods shall be so unladen (unless for the purpose of lightening the ship or vessel in crossing over a shoal or bar or sand-bank) except between sunrise and sunset, and on some day not being a Sunday or statutory holiday, and at some hour and place at which an officer of the customs is appointed to attend the unloading of goods, or at some place for which a suffrance has been granted by the collector or other proper officer for the unloading of such goods; and if, after the arrival of the vessel within 3 leagues of the coast, any alteration be made in the stowage of the cargo so as to facilitate the unlawful unloading of any part thereof, or if any part thereof be fraudulently staved, destroyed, or thrown overboard, or any package be opened, it shall be deemed a breaking of bulk, and all goods unladen contrary to this act shall be seized and forfeited; and if bulk be broken contrary to this act, the master shall forfeit \$200, and the vessel may be detained until the said fine is paid or satisfactory security is given for the payment thereof; and unless payment be made or security be given within thirty days such vessel may, at the expiration thereof, be sold to pay the said penalty.

17. The governor in council may, by regulation from time to time, appoint the ports and places of entry for the purposes of this act, and may in like manner increase or diminish the number, or alter the position or limits thereof.

18. All goods imported into Canada, whether by sea, land, coastwise, or by inland navigation, whether dutiable or not, must be brought in at a port of entry where a custom-house is lawfully established.

19. All goods or merchandise exported by sea, land, or by inland navigation must be reported at the nearest custom-house, or, if exported from any place where no custom-house is established, they must be reported within twenty-four hours of the time of such export at the nearest custom-house, according to such regulations as may be established by the governor in council from time to time.

20. If any goods are imported into Canada at any other place than at some port or place of entry at which a custom-house is then lawfully established, or being brought into such port or place of entry by land or inland navigation, are carried past such custom-house or removed from the place appointed for the examination of such goods by the collector or other officer of the customs at such port or place before the same have been examined by the proper officer and all duties thereon paid and a permit given accordingly, such goods shall be seized and forfeited; and each and every person concerned in such unlawful importation or removal shall be subject to a penalty equal to the value of such goods.

21. If any vessel with dutiable goods on board enters any place other than a port of entry (unless from stress of weather or other unavoidable cause), such goods (ex-

cept those of an innocent owner) shall be seized and forfeited, together with the vessel in which the same were imported, if such vessel is of less value than \$800.

22. If any vessel, worth more than \$800, with dutiable goods on board, enters any place other than a port of entry (unless from stress of weather or other unavoidable cause), such goods (except those of an innocent owner) shall be seized and forfeited, and the vessel may be seized and the master or person in charge thereof shall incur a penalty of \$800, and the vessel may be detained until such penalty be paid or security given for the payment thereof; and, unless payment be made or satisfactory security be given within thirty days, such vessel may, at the expiration thereof, be sold to pay the said penalty.

23. If any goods are unlawfully imported by land they shall be seized and forfeited, together with the vehicle in or by which such goods are so imported or removed, and the horses or other cattle employed in drawing such vehicle, or in importing or removing such goods.

24. If any goods are unlawfully imported on any railway they shall, in like manner, be seized and forfeited, and the car in which such goods were so imported shall be seized and detached from the train and forfeited; and any conductor, baggage-master, or any officer or servant employed on any railway, and any officer or servant employed by any express company, who is privy to or aids or abets in such unlawful importation, shall, upon summary conviction thereof, be liable to a fine of not less than \$50 nor more than \$200, or to imprisonment for not less than three months nor more than twelve months, or to both fine and imprisonment within the said limits.

25. The master of every vessel coming from any port or place out of the Dominion of Canada, or coastwise, and entering any port in Canada, whether laden or in ballast, shall go without delay, when such vessel is anchored or moored, to the custom-house for the port or place of entry where he arrives, and there make a report in writing to the collector or other proper officer, of the arrival and voyage of such vessel, stating her name, country, and tonnage, the port of registry, the name of the master, the country of the owners, the number and names of the passengers (if any), the number of the crew, and whether she is laden or in ballast, and if laden, the marks and numbers of every package and parcel of goods on board, and where the same was laden, and the particulars of any goods stowed loose, and where and to whom consigned, and where any and what goods, if any, have been laden or unladen, or bulk has been broken, during the voyage, what part of the cargo and the number and names of the passengers which are intended to be landed at that port, and what and whom at any other port in Canada, and what part of the cargo (if any) is intended to be exported in the same vessel, and what surplus stores remain on board—as far as any of such particulars can be known to him.

26. In the case of every vessel bound for any seaport in Canada, from any port out of Canada, the collector or proper officer of such Canadian port may cause such vessel to be boarded by an officer of customs, detailed by him for such service, at any place within 3 marine miles of the anchorage ground, and such officer may demand from the master or purser of such vessel a correct copy of the report inwards, intended by him to be presented at the custom-house on arrival. Such boarding officer may remain on board the vessel until she anchors, and the copy of the report so received by him shall be deposited by him at the custom-house as the vessel's report inwards for comparison with that to be presented by the master in person.

27. The master or person in charge of any vessel, whether laden or in ballast, arriving by inland navigation in any port or place of entry in Canada, from any place beyond the limits of Canada, and having any goods therein (whether any duty be payable on such goods or not) shall go without delay, when such vessel is anchored or moored, directly to the custom-house for such port or place of entry, and make a report in writing (in such form as may be appointed for that purpose by competent authority), to the collector or other proper officer, of the arrival of such vessel, stating in such report the marks and numbers of every package and parcel of goods in such vessel, or in the charge and custody of such person, from what place the same are respectfully brought, and to what place and to whom consigned or belonging, as far as such particulars are known to him; and he shall then and there produce such goods to the collector or other proper officer, and shall declare that no goods have been unladen from such vessel or have been put out of his possession, between the time of his coming within the limits of Canada and of his making his report and affidavit, and shall further answer all such questions concerning such vessel or goods as are demanded of him by such collector or officer.

28. The master shall at the time of making his report, if required by the officer of customs, produce to him the bills of lading of the cargo, or true copies thereof, and shall make and subscribe an affidavit referring to his report and declaring that all the statements made in the report are true; and shall further answer all such questions concerning the vessel and cargo, and the crew, and the voyage, as shall be demanded of him by such officer, and shall, if required, make the substance of any such answer part of his report.

29. If any goods are unladen from any vessel before such report be made, or if the master fails to make such report, or makes an untrue report, or does not truly answer the questions demanded of him, as provided in the next preceding section, he shall forfeit the sum of \$400, and the vessel may be detained until the said fine be paid.

30. Any goods not reported, found on board of any vessel or landed, shall be seized and forfeited, unless it appears that there was no fraudulent intention, in which case the master shall be allowed to amend his report; but the necessary discharging of any goods for the purpose of lightening the vessel in order to pass any shoal, or otherwise for the safety of such vessel, shall not be deemed an unlawful landing or breaking of bulk.

31. If the contents of any package intended for importation into another port, or for exportation, be unknown to the master, the officer may open and examine it, and cause it for that purpose to be landed if he sees fit; and if any prohibited goods be found therein, all the goods in such package shall be seized and forfeited.

32. In order to avoid injurious delay to steamers and other vessels under certain circumstances, the governor in council may make such regulations as may be considered advisable for the appointment of buffance wharves and warehouses, at which goods arriving by vessels in transit to other ports, or confined to certain days of departure, may be landed and afterward stored before entry, such vessels being duly reported to the custom-house, and having obtained the collector's warrant for the purpose; provided such landing be effected between sunrise and sunset, on a day not being Sunday or a statutory holiday, and provided the goods, on being so landed, are immediately stored in some such approved buffance warehouse, and such goods shall be thereafter dealt with by the customs as prescribed by law; but nothing in this section shall affect any contract, express or implied, between the master or owner of any such vessel and the owner, shipper, or consignee of any such goods as aforesaid, or the rights or liability of any party under such contract; and provided further, that the governor in council may make similar regulations for the appointment of buffance warehouses, in which goods arriving by railway may be stored before entry, such goods having been duly reported to the collector or proper officer of customs.

33. The conductor of every railway train carrying freight arriving at any port in Canada from any foreign port shall come directly, and before bulk is broken, to the custom-house at such port, and report all merchandise on board his train, or in any particular car belonging to such train, stating the marks and numbers of every package and parcel of goods on board, and where the same was laden, and where and to whom consigned, and what part thereof, if any, is intended to pass *in transitu* through Canada to some port or place in the United States, or to be transhipped at some other port in Canada, to be exported to a port or place out of Canada; and if any goods are unladen before such report is made, except by written permission of the collector, or proper officer of customs, or if the conductor fails to make such report, or makes an untrue report, or does not truly answer any questions put to him respecting the same, he shall forfeit the sum of \$400.

34. The person in charge of any vehicle, arriving by land in any place in Canada, and containing goods, whether any duty be payable on such goods or not, and the person in charge of any vehicle so arriving, if the vehicle or its fittings, furnishings or appurtenances, or the animals drawing the same or their tackle, is or are liable to duty, and any person whosever so arriving in Canada from any port or place out of Canada, on foot or otherwise, and having with him or in his charge or custody, any goods, whether such goods be dutiable or not, shall come to the nearest custom-house or to the station of the nearest officer of customs, before unloading or in any manner disposing of the same, and make a report in writing to the collector or proper officer of customs, stating the contents of each and every package and parcel of goods, and the quantities and values of the same; and shall also then answer all questions respecting such goods or packages, and the vehicle, fittings, furnishings and appurtenances, and animals, and the tackle appertaining thereto, as the said collector, or proper officer of customs, may require of him, and shall then and there make due entry of the same, in accordance with the law in that behalf.

35. Fresh fish, coin, or bullion may be landed without entry or warrant, as may also goods in any stranded or wrecked vessel; provided they be duly reported and entered as soon as possible after being safely deposited on shore, and that the landing be in presence of an officer of the customs or receiver of wreck, or other person authorized to do the acts of such receiver under "the wreck and salvage act, 1873," or any act amending the same.

36. If a vessel having live stock or perishable articles on board arrives after business hours, the collector or any officer at the port may permit the master to unlade the same before report; but report shall in such case be made as soon as may be after the next opening of the customs office.

37. The governor in council may, by regulation, declare any trade or voyage on the seas, rivers, lakes, or waters, within or adjacent to Canada, whether to or from

any place within or without Canada, to be a coasting trade or a coasting voyage within the meaning of this act, whether such seas, rivers, lakes, or waters are or are not, geographically or for the purposes of other acts or laws, inland waters; and all carrying by water, which is not a carrying by sea or coastwise, shall be deemed to be a carrying by inland navigation; and the governor in council may, from time to time, with regard to any such coasting trade, dispense with such of the requirements of this act as he deems it inexpedient to enforce in any case or class of cases, or make such further regulations as he may think expedient; and any goods carried coastwise, or laden, water-borne or unladen, contrary to such regulations or to any provision of this act, not dispensed with by such regulations, shall be seized and forfeited.

38. It shall not be lawful, unless otherwise authorized by the governor in council, to import any goods, wares, or merchandise from any port or place out of Canada in any vessel which has not been duly registered and has not a certificate of such registry on board.

39. If any goods are unladen from any vessel or vehicle, or put out of the custody of the master or person in charge of the same, before report is made as required by this act, or if such person or master fails to make such report, or to produce such goods, or makes an untrue report, or does not truly answer the questions demanded of him, he shall for each such offense forfeit the sum of \$400; and if any such goods are not so reported and produced, or if the marks and numbers or other description of any package do not agree with the report made, such goods or package shall be seized and forfeited, and the vessel or vehicle and the animals drawing the same shall be detained until such amount be paid.

40. Every importer of any goods by sea or from any place out of Canada shall, within three days after the arrival of the importing vessel, make due entry inwards of such goods, and land the same; and every importer of any goods imported by inland navigation in a decked vessel of 100 tons burden or more, shall, within twenty-four hours of the arrival of the importing vessel, make due entry inwards of such goods, and land the same; and every importer of any goods imported by inland navigation in any undecked vessel, or in any vessel less than 100 tons burden, or by land, shall, forthwith, after the importation of such goods, produce the same to the proper officer and make due entry thereof.

41. The person entering any goods inwards shall deliver to the collector or other proper officer, an invoice of such goods showing the place and date of purchase and the name or style of the firm or person from whom the goods were purchased, and a full description thereof in detail, giving the quantity and value of each kind of goods so imported, and a bill of the entry thereof, in such form as shall be appointed by competent authority, fairly written or printed, or partly written and partly printed, and in duplicate, containing the name of the importer,—and, if imported by water, the name of the vessel and of the master, and of the place to which bound, and of the place, within the port, where the goods are to be unladen,—and the description of the goods, and the marks and numbers and contents of the packages, and the place from which the goods are imported, and of what country or place such goods are the growth, produce, or manufacture.

42. Unless the goods are to be warehoused in the manner by this act provided, the importer shall, at the same time, pay down, or cause to be so paid, all duties upon all goods entered inwards; and the collector or other proper officer shall, immediately thereupon, grant his warrant for the unlading of such goods, and grant a permit for the conveyance of the same goods further into Canada, if so required by the importer.

43. In default of such entry and landing, or production of the goods, or payment of duty, the officer of customs may convey the goods to a customs warehouse, or some secure place appointed by the collector for such purpose, there to be kept at the risk and charge of the owner; and if such goods be not duly entered within one month from the date of their being so conveyed to the custom warehouse, or other appointed place, and all charges of removal and warehouse rent duly paid at the time of such entry, the goods shall be sold by public auction to the highest bidder, and the proceeds thereof shall be applied, first to the payment of duties and charges, and the overplus, if any, after discharging the vessel's lien, or other charges for transportation, shall be paid to the owner of the goods or to his lawful agent; provided, always, that in case the same cannot be sold for a sum sufficient to pay the duties and charges if offered for sale for home consumption, or the charges if offered for sale for exportation, such goods shall not be sold, but be destroyed.

44. Any goods unladen or landed before due entry thereof and warrant for landing, shall be seized and forfeited, and any person concerned in landing or receiving or concealing goods so landed, shall, for each offense, forfeit \$400.

45. If any goods are brought in any decked vessel, from any place out of Canada to any port of entry therein, and not landed, but it is intended to convey such goods to some other port in Canada in the same vessel, there to be landed, then the duty shall not be paid nor the entry completed at the first port, but at the port where the goods are to be landed, and to which they shall be conveyed accordingly, under such regu-



lations and with such security or precautions for compliance with the requirements of this act, as the governor in council may, from time to time, appoint.

46. The collector may require from the importer (or from his agent) of any goods charged with duty, or conditionally exempted from duty, or exempt therefrom, before admitting the said goods to entry, such further proof as he deems necessary, by oath or declaration, production of invoice or invoices, or bills of lading or otherwise, that such goods are properly described and rated for duty, or come properly within the meaning of such exemptions.

47. Any package of which the importer or his agent declares the contents to be unknown to him, may be opened and examined by the collector or other proper officer, in the presence of such importer or agent, and at the expense of the importer, who shall also bear the expense of repacking.

48. No entry, nor any warrant for the landing of any goods, or for the taking of any goods out of any warehouse (as hereinafter provided) shall be deemed valid, unless the particulars of the goods and packages in such entry or warrant correspond with the particulars of the goods and packages purporting to be the same in the report of the vessel, or other report (where any is required) by which the importation or entry thereof is authorized, nor unless the goods have been properly described in such entry by the denominations, and with the characters and circumstances according to which such goods are charged with duty or may be imported; and any goods taken or delivered out of any vessel, or out of any warehouse, or conveyed into Canada beyond the port or place of entry, by virtue of any entry or warrant not corresponding with the facts in all such respects, or not properly describing the goods, shall be deemed to be goods landed or taken without due entry thereof, and shall be seized and forfeited; and the collector or proper officer, after the entry of any goods, may, on suspicion of fraud, open and examine any package of such goods, in presence of two or more credible witnesses, and if, upon examination, the same are found to agree with the entries, they shall be repacked by such collector or proper officer, at the public cost, but otherwise they shall be seized and forfeited.

49. The quantity and value of any goods shall always be stated in the bill of entry thereof, although such goods are not subject to duty; and the invoice thereof shall be produced to the collector.

50. The surplus stores of vessels arriving in Canada shall be subject to the same duties and regulations as if imported as merchandise; but if the owner or master desires to warehouse the same for reshipment for the future use of the vessel, the collector may permit him so to do.

51. Vessels entering the Gut of Annapolis may be reported and entered, and the duties on goods therein imported paid either at the port of Digby or Annapolis.

52. Vessels entering the Great Bras d'Or and Little Bras d'Or shall be reported and entered at such place as the minister of customs may, from time to time, direct.

53. If any goods imported by water, or partly by water and partly by land, on which duties (ad valorem or specific or both) are payable, receive damage during the voyage of importation between the actual departure of the vessel in which they are laden from the foreign port of exportation and the actual arrival of the goods at the port of destination in Canada, whereby such goods have become lessened in value, an abatement may be made in the manner hereinafter provided in the duty payable upon such goods, or in case duty has been paid thereon, a refund of a part of such duty may be made proportionate to the damage sustained; provided the claim therefor is made in due form and properly substantiated at the first landing from such vessel of the goods, and while they are in the custody of the Crown, or as soon after such first landing as they can be examined; provided also, that such examination be completed and certified by the collector of customs, customs appraiser, or other proper officer, whose duty it shall be to assess such damage within ten days of such landing.

54. If any goods imported by railway, or by any other land vehicle, on which duties (ad valorem, or specific, or both) are payable, receive damage during the course of transportation, after they are laden on such railway or other vehicle, and before they arrive at the Canadian port of destination, whereby they become lessened in value, an abatement may be made in the manner hereinafter provided in the duty payable upon such goods, provided the claim for such abatement is made in due form within ten days of the arrival of such goods at the Canadian port of destination, and substantiated in the same manner as provided in the next preceding section.

55. The collector of customs or appraiser or other proper officer whose duty it may be to examine and assess the amount of damage sustained on voyage or in course of importation, shall do so with all possible dispatch on being notified to that effect, and shall certify to the exact cause and extent of such damage with reference to the value of the goods in the principal markets of the country whence imported, and not according to the value in Canada.

56. The collector or appraiser shall not regard as evidence of the existence or amount of damage any price realized at an auction or forced sale thereof, nor shall he estimate nor shall any damage be allowed which may have originated from decay,

dampness, or other cause existing before the voyage commenced, and which may have rendered the goods unfit to withstand the ordinary risks of the voyage of importation, nor shall he estimate nor shall any allowance be made for or duty refunded for rust on iron or steel or any manufacture thereof, except on polished Russia iron and Canada plates, and on such only to the extent of 50 per cent., nor shall any allowance be made for stains or injury to any packages holding liquids, or the labels thereon, unless the contents of such packages have, at the same time, received actual specific damage by the admixture therewith of water or other foreign substance.

57. Upon the collector or appraiser ascertaining the percentage of damage, such percentage shall be deducted from the original value thereof, and duty shall then be levied and collected on such reduced value at an ad valorem rate which shall be equivalent to the rate of specific or specific and ad valorem duty which should have been collected upon such goods if they had not been so damaged.

58. When any vessel is entered at the custom-house at any port in Canada, on board of which there are any goods on which any duty has been levied or collected or on which any duty has been deposited, and thereafter the said goods are lost or destroyed before the same are landed from such vessel, or from any vessel or craft employed to lighten such vessel, then, on proof being made on the oath of one or more credible witness or witnesses, before and to the satisfaction of the collector or proper officer of the customs at the place (who shall administer the oath) that such goods, or any part thereof (specifying the same), have been so lost or destroyed before the landing of the same, the duties on the whole or the part thereof so proved to be lost or destroyed shall, if the same have been paid or deposited, be returned to the owner or his agent.

59. If any vessel having received damage puts into a port in Canada to which she is not bound, having dutiable goods on board, which it may be necessary to land for the purpose of repairing the vessel in order to enable her to proceed on her voyage, the collector, upon application of the master or agent, may permit such goods to be unladen and deposited in a warehouse in the custody of the collector; and the collector shall cause to be taken an exact account of the packages and contents, and entry of the goods shall then be made by the master or agent as hereinbefore directed, and they shall remain in the custody of the collector until the vessel is ready for sea, when upon payment of storage and the reasonable charges of unloading and storing, the collector shall deliver up the same to the master or agent to be exported or carried coastwise, as the case may be, under the same security and regulations as if such goods had been imported in the usual manner, and without payment of duty. No person shall be entitled to the benefit of this section who shall have sold any of such goods, except such as it may have been necessary to sell to defray the expense of repairs and charges of the vessel, or as may have been authorized by the collector of customs; and if goods are sold for payment of repairs and charges they shall be subject to duty, and shall be warehoused, or the duties thereon paid by the purchaser.

60. Goods derelict, flotsam, jetsam, or wreck, or landed or saved from any vessel wrecked, stranded, or lost, brought, or coming into Canada, shall be subject to the same duties and regulation as goods of the like kind imported are subject to.

61. If any person has in his possession, in port or on land, any goods, derelict, flotsam, jetsam, or wreck, the same being dutiable, and does not give notice thereof to the nearest officer of customs without unnecessary delay, or does not on demand pay the duties thereon or deliver the same to the proper officer, he shall forfeit \$200, in addition to all other liabilities and penalties incurred by him, and the goods shall be seized and forfeited; and if any person removes or alters in quantity or quality any such goods, or unnecessarily opens or alters any package thereof or abets any such act before the goods are deposited in a warehouse under the custody of the customs officers, he shall, in addition to all other liabilities and penalties incurred by him, forfeit \$200.

62. If the duties on such goods are not paid within eighteen months from the time when the same were so delivered as aforesaid, the same may be sold in like manner and for the same purposes as goods imported may in such default be sold; if they are sold for more than enough to pay the duty and charges thereon, the surplus shall be paid over to the person entitled to receive it.

63. All goods exempt from duty as being imported or taken out of warehouse for the use of Her Majesty's troops, or for any purpose for which such goods may be imported free of duty, shall, in case of the sale thereof after importation, become liable to and be charged with the duties payable on like goods on their importation for other purposes; and if such duties be not paid, such goods shall be forfeited, and may be seized and dealt with accordingly.

64. In all cases where duties are charged according to the weight, tale, gauge, or measure, such allowances shall be made for tare and draft upon the packages as may be appointed by regulation made by the governor in council; but when the original invoice of any goods is produced, and a declaration of the correctness thereof made as hereinafter provided, the tare according to such invoice shall be deducted from the

gross weight of the goods instead of the allowances aforesaid; subject, however, to such further regulation as the governor in council may, from time to time, make.

65. The collector or any appraiser under this act, may take samples of any goods imported, for the purpose of ascertaining whether any and what duties are payable on such goods, and such samples shall be disposed of as the minister of customs may direct.

66. The governor in council may appoint one or more appraisers, to be called Dominion customs appraisers, with jurisdiction at all ports and places in Canada; and may also appoint customs appraisers with jurisdiction at such ports and places in Canada as may be designated in the order in council in that behalf; and each such appraiser shall, before acting as such, take and subscribe the following oath of office before any collector or other person duly authorized to administer such oath:

"I, A. B., having been appointed an appraiser of goods, wares, and merchandise, and to act as such at the port of — (or as the case may be), do solemnly swear (or affirm) that I will faithfully perform the duties of the said office without partiality, fear, favor or affection, and that I will appraise the value of all goods submitted to my appraisal according to the true intent and meaning of the laws imposing duties of customs in this Dominion; and that I will use my best endeavors to prevent all fraud, subterfuge, or evasion of the said laws, and more especially to detect, expose, and frustrate all attempts to undervalue any goods, wares, or merchandise on which any duty is chargeable. So help me God."

A. B.,  
Appraiser for  
(as the case may be.)

"Sworn before me, this \_\_\_\_\_ day of

18 . (as the case may be.)

67. If no appraiser is appointed in any port of entry, the collector there shall act as appraiser, but without taking any special oath of office as such; and the minister of customs may, at any time, direct any appraiser to attend at any port or place for the purpose of valuing any goods, or of acting as appraiser there during any time, which such appraiser shall accordingly do without taking any new oath of office; and every appraiser shall be deemed an officer of the customs.

68. Where any duty ad valorem is imposed on any goods imported into Canada, the value for duty shall be the fair market value thereof, when sold for home consumption, in the principal markets of the country whence and at the time when the same were exported directly to Canada.

69. Such market value shall be the fair market value of such goods in the usual and ordinary commercial acceptance of the term, at the usual and ordinary credit and not the cash value of such goods, except in cases in which the article imported is, by universal usage, considered and known to be a cash article, and so bona fide paid for in all transactions in relation to such article; and all invoices representing cash values, except in the special cases hereinbefore referred to, shall be subject to such additions as to the collector or appraiser of the port at which they are presented may appear just and reasonable, to bring up the amount to the true and fair market value, as required by this section.

70. Where a drawback of duties has been allowed by the government of the country where the goods were manufactured, the amount of such drawback shall be taken and considered to be a part of the fair market value of such goods; and in cases where the amount of such drawback has been deducted from the value of such goods upon the face of the invoice under which entry is to be made, or is not shown thereupon, the collector of customs, or proper officer, shall add the amount of such deduction or drawback and collect and cause to be paid the lawful duty thereon.

71. No deduction of any kind shall be allowed from the value of any goods imported into Canada because of any drawback paid or to be paid thereon, or because of any special arrangement between the seller and purchaser having reference to the exportation of such goods, or the exclusive right to territorial limits for the sale thereof, or because of any royalty payable upon patent rights but not payable when goods are purchased for exportation, or on account of any other consideration by which a special reduction in price might or could be obtained; provided that nothing herein shall be understood to apply to general fluctuations of market values.

72. No deduction from the value of goods contained in any invoice shall be allowed on account of the assumed value of a package or packages, where no charge for such package or packages has been made in such invoice; and where such charge is made it shall be the duty of the customs officer to see that the charge is fair and reasonable, and represents no more than the original cost thereof.

73. No deduction from the value of goods in any invoice shall be made on account of charges for packing, or for straw, twine, cord, paper, cording, wiring, or cutting, or for any expense incurred or said to have been incurred in the preparation and

packing of goods for shipment, and all such charges and expenses shall, in all cases, be included as part of the value for duty.

74. The governor in council may provide that in the cases and on the conditions to be mentioned in the order, goods bona fide exported to Canada from any country, but passing *in transitu* through another country, shall be valued for duty as if they were imported directly from such first-mentioned country.

75. The standards or instruments by which the colors and grades of sugar are to be regulated, and the classes to which sugars shall be held to belong, with reference to duty chargeable thereon, shall be selected and furnished from time to time to the collectors of such ports of entry as may be necessary, by the minister of customs, in such manner as he may deem expedient; and the decision of the appraiser, or of the collector of a port where there is no appraiser, as to the class to which any sugar belongs, and the duties to which it is subject, shall be final and conclusive, unless upon appeal to the commissioner of customs, within thirty days, such decision be, with the approval of the minister, changed; the decision of the commissioner, with such approval, shall then be final.

76. All cane-juice, sirup of sugar or of sugar-cane, melado, concentrated melado or concentrated molasses, entered as molasses, or under any other name than cane-juice, sirup of sugar or of sugar-cane, melado, concentrated melado, or concentrated molasses, shall be seized and forfeited.

77. The value for duty on which any ad valorem duties on sugar, molasses, melado, sirup of sugar, or sugar-cane, sirup of molasses or of sorghum, concentrated melado or concentrated molasses, and sugar candy, shall, unless otherwise provided, be calculated and taken, shall include the value of the packages containing the same, and the shipping and other charges on such articles; and the value for duty shall be the value of the goods "free on board," at the place or port whence last exported direct to Canada; and the governor in council shall have power to declare what charges shall be included in such value so defined.

78. The governor in council shall have power to interpret, limit or extend the meaning of the conditions upon which it is provided in any act imposing duties of customs, that any article may be imported free of duty for special purposes, or for particular objects or interests; and to make regulations either for declaring or defining what cases shall come within the conditions of such act, and to what objects or interests of an analogous nature, the same shall apply and extend, and to direct the payment or non-payment of duty in any such case, or the remission thereof by way of drawback if such duty has been paid.

79. If the importer of any goods whereon a duty ad valorem is imposed, or the person authorized to make the declaration required with regard to such goods, makes and subscribes a declaration before the collector or other proper officer, that he cannot, for want of full information, make perfect entry thereof, and takes the oath in such cases provided, then the collector or officer may cause such goods to be landed on a bill of sight for the packages and parcels thereof, by the best description that can be given, and to be seen and examined by such person and at his expense, in the presence of the collector or principal officer, or of such other officer of the customs as shall be appointed by the said collector or other proper officer, and to be delivered to such person, on his depositing in the hands of the collector or officer a sum of money sufficient in the judgment of the collector or officer to pay the duties thereon; and if the importer does not complete a perfect entry within the time appointed by the collector, the money so deposited shall be taken and held to be the duty accruing on such goods, and shall be dealt with and accounted for accordingly.

80. Such sight entry may be made as aforesaid and the goods may be delivered, if such importer or person as aforesaid makes oath or affirms that the invoice has not been and cannot be produced, and pays to the collector or proper officer aforesaid a sum of money sufficient in the judgment of such collector or officer to pay the duties on such goods, and such sum shall then be held to be the amount of the said duties.

81. Except only in cases where it is otherwise provided herein, or by regulation of the governor in council, no entry shall be deemed perfect unless a sufficient invoice of the goods to be entered, duly certified in writing thereon as correct by the person, firm, and corporation from whom the said goods were purchased, has been produced to the collector and duly attested as required by this act.

82. With the bill of entry of any goods there shall be produced and delivered to and left with the collector an invoice of the goods, as provided in the next preceding section, attested by the oath of the owner, and if the owner be not the person entering such goods then verified by the oath of the importer or consignee, or (subject to the provision hereinafter made) other person who may lawfully make such entry and verify such invoice in the form or to the effect of the oath or oaths provided or to be provided by order in council in that behalf, which oath or oaths shall be written or printed, or partly written and partly printed on such invoice, or on the bill of entry (as the case may be), or shall be annexed thereto, and shall in either case distinctly refer to such invoice so that there can be no doubt as to its being the invoice to which

such oath is intended to apply, and shall be subscribed by the party making it and certified by the signature of the person before whom it is made; and the bill of entry shall also contain a statement of the quantity and value for duty of the goods therein mentioned, and shall be signed by the person making the entry, and shall be verified in the form or to the effect of the oath provided or to be provided by order in council in that behalf.

83. If there be more than one owner, importer, or consignee of any goods, any one of them cognizant of the facts may take the oath required by this act; and such oath shall be sufficient unless the goods have not been obtained by purchase in the ordinary way, and some owner resident out of Canada is the manufacturer or producer of the goods, or concerned in the manufacture or production thereof, in which case the oath of such non-resident owner (or one of them, if there be more than one) cognizant of the fact shall be requisite to the due attestation of the invoice.

84. The invoice of any goods produced and delivered to the collector with the bill of entry thereof, must, if required by the collector, be attested by the oath of the owner or one of the owners of such goods, and must be verified also by the oath of the importer, or consignee, or other person who may, under this act, lawfully make entry of such goods and verify such invoice, if the owner or one of the owners is not the person entering such goods, and must also, if required by the collector, be attested by the oath of the non-resident owner being the manufacturer or producer of such goods, in the case mentioned in the next preceding section, although one of the owners be the person entering the goods and verifying the invoice on oath.

85. If the owner, importer, or consignee of any goods be dead, or a bankrupt, or insolvent, or if for any cause his personal estate be administered by another person, then his executor, curator, administrator, or assignee, or person administering as aforesaid, may, if cognizant of the facts, take any oath and make any entry which such owner, importer, or consignee might otherwise have taken or made.

86. No evidence of the value of any goods imported into Canada, or taken out of warehouse for consumption therein, at the place whence and the time when they are to be deemed to have been exported to Canada, contradictory to or at variance with the value stated in the invoice produced to the collector, with the additions (if any) made to such value by the bill of entry, shall be received in any court in Canada.

87. Any oath required under the provisions of this act connected with the entry of goods may be made in Canada before the collector, subcollector, surveyor, or chief clerk at the port where the goods are entered, or if the person making such oath is not resident there, then before the collector or proper officer of some other port; and when such oath is required to be made out of the limits of Canada, it may be made at any place within the United Kingdom, or at any place in Her Majesty's possessions abroad, before the collector or before the mayor or other chief municipal officer of the place where the goods are shipped, or before a notary public, and at any other place before a British consul, or if there be no British consul, then before a foreign consul at such place.

88. The commissioner of customs or other person acting as deputy head of the department, and all officers holding under order in council the rank of chief clerk of the inside service in the said department, and all duly appointed inspectors of customs ports, shall, by virtue of their office, have full authority to administer all oaths and receive all affirmations and declarations required or authorized by this act, and the governor in council may, from time to time, by regulation, appoint or designate such other and additional persons, officers, or functionaries, as he sees fit, by name, or by their name of office, and in Canada or out of it, as those before whom such oaths may be validly taken, and may, by any order in council relax or dispense with the provisions of this act touching such oaths, in or with regard to goods imported by land or inland navigation, or to any other class of cases to be designated in such regulation.

89. No person other than the owner, consignee, or importer of the goods of which entry is to be made, shall be allowed to take any oath connected with the entry, unless there be attached to the bill of entry therein referred to, a declaration by the owner, consignee, or importer of the said goods or his attorney and agent duly appointed to transact business with the collector, pursuant to the provisions in that behalf of this act, to the same effect as the oath, distinctly referring to the invoice presented with such bill of entry, and signed by such owner, importer or consignee, or by his attorney and agent appointed as aforesaid, either in presence of the agent making the entry, who shall attest the signature, or of some justice of the peace or notary public, who shall attest the same.

90. Such declaration shall be kept by the collector; and if there be any willfully false statement in such declaration, the goods shall be liable to seizure and forfeiture in the same manner and with the same effect as if such false statement were contained in the oath, and the person making such false statement shall be subject to the same penalties, forfeitures, and criminal punishments as if he had himself taken the oath and had made such false statement therein; but such written declaration may

be dispensed with under the order of the governor in council, where it may be deemed advisable, in the interest of commerce, to dispense therewith.

91. The governor in council may prescribe the forms of oaths required under this act. Such forms may from time to time be repealed or amended, and the forms of oaths authorized by statute or by the governor in council at the time of the passing of this act shall continue to be the authorized forms until altered or dispensed with by the governor in council.

92. If any person makes, or sends, or brings into Canada, or causes or authorizes the making, sending, or bringing into Canada of any invoice or paper, used or intended to be used as an invoice for customs purposes, wherein any goods are entered or charged at a less price or value than that actually charged, or intended to be charged for them, no price or sum of money shall be recoverable by such person, his assigns or representatives, for the price or on account of the purchase of such goods, or any part of them, or on any bill of exchange, note, or other security (unless in the hands of an innocent holder for value without notice), made, given, or executed for the price of or on account of the purchase of such goods, or any part of such price.

93. The production or proof of the existence of any other invoice, account, document or paper made or sent by any person, or by his authority, wherein goods or any of them are charged or entered at or mentioned as bearing a greater price than that set upon them in any such invoice as in the next preceding section mentioned shall be *prima facie* evidence that such invoice was intended to be fraudulently used for customs purposes; but such intention, or the actual fraudulent use of such invoice, may be proved by any other legal evidence.

94. Any importer of goods into Canada, or any person on his behalf, who shall present or cause to be presented, with intent to make entry thereunder, any false or fraudulent invoice, such as described in the two next preceding sections shall be subject to a penalty equal in amount to the value of the goods represented in such invoice, and the goods shall also be seized and forfeited.

95. The collectors of customs at all ports in Canada shall retain and put on file, after duly stamping the same, all invoices of goods imported at such ports respectively, of which invoices they shall give certified copies or extracts, whenever called upon so to do by the importers, and such copies or extracts so duly certified by the collector or other proper officer, and bearing the stamp of the custom-house at which they are filed, shall be considered and received as authentic, and the collector shall be entitled to demand for each certificate a fee of 50 cents before delivering the same, but in no case shall an invoice be shown to or a copy thereof given to any person other than the said importer, or an officer of customs, except upon the order or subpoena of a proper court.

96. Any appraiser, or any collector acting as such, or the persons to be selected as hereinafter mentioned to examine and appraise any goods, if the importer, owner, consignee, or agent is dissatisfied with the first appraisement, may call before him or them and examine upon oath any owner, importer, consignee, or other person, touching any matter or thing which such appraiser or collector deems material in ascertaining the true value of any goods imported, and may require the production on oath of any letters, accounts, invoices, or other papers or account-books in his possession relating to the same.

97. If any person called, as provided in the next preceding section, neglects or refuses to attend, or declines to answer, or refuses to answer in writing (if required) to any interrogatories, or to subscribe his name to his deposition or answer, or to produce any such papers or account-books, as provided by the next preceding section, when required so to do, he shall thereby incur a penalty of \$50; and if such person is the owner, importer, or consignee of the goods in question, the appraisement which the appraiser or collector acting as such shall make thereof shall be final and conclusive.

98. If any person willfully swears falsely in any such examination, and he is the owner, importer, or consignee of the goods in question, they shall be seized and forfeited; and all depositions or testimony in writing taken under either of the two next preceding sections shall be filed in the office of the collector at the place where the same are made or taken, there to remain for future use or reference.

99. If the importer, owner, consignee, or agent, having complied with the requirements of this act, is dissatisfied with the appraisement made, as aforesaid, of any such goods, he may forthwith give notice, in writing, to the collector, of such dissatisfaction, on the receipt of which notice the collector shall select two discreet and experienced persons, familiar with the character and value of the goods in question, to examine and appraise the same, agreeably to the foregoing provisions; and all invoices, entries, and other papers connected with the appraisement, and all evidence taken by or before the appraiser or collector of customs acting as such, and by or before the said persons, shall be transmitted without delay to the commissioner of customs, who, after due examination of the same, shall decide and determine the proper

rate and amount of duty to be collected and paid, and his decision shall be final and conclusive, and the duty shall be levied and collected accordingly.

100. The said persons appointed to appraise shall each be entitled to the sum of \$5, to be paid by the party dissatisfied with the first appraisement, if the value ascertained by the second appraisement is equal to or greater than that ascertained by such first appraisement or if the value ascertained by such second appraisement exceeds by 10 per cent., or more, the value of the goods for duty, as it would appear by the invoice and bill of entry thereof; otherwise the same shall be paid by the collector out of any public moneys in his hands, and charged in his accounts.

101. Any person chosen to make an appraisement required under this act who, after due notice of such choice has been given to him in writing, declines or neglects to make such appraisement, shall, for so refusing or neglecting without good and sufficient cause, incur a penalty of \$40 and costs.

102. If in any case the true value for duty of any goods, as finally determined under this act, or as determined in any action or proceeding to recover unpaid duties, exceeds by 20 per cent. or more the value for duty, as it would appear by the bill of entry thereof, then in addition to the duty payable on such goods, when properly valued, there shall be levied and collected upon the same a sum equal to one-half of the duty so payable; and in case the owner or importer refuses or neglects to pay the said duty and additional sum, the goods may be seized and forfeited.

103. The collector may, when he deems it expedient for the protection of the revenue and the fair trader, subject always to any regulations to be made by the governor in council in that behalf, detain and cause to be properly secured, and may at any time within fifteen days declare his option to take, and may take, for the Crown, any whole package or packages, or separate and distinct parcel or parcels, or the whole of the goods mentioned in any bill of entry, and may pay, when thereunto requested, to the owner or person entering the same, and out of any public moneys in the hands of such collector, the sum at which such goods, packages, or parcels are respectively valued for duty in the bill of entry, and 10 per cent. thereon, and also the fair freight and charges thereon to the port of entry, and may take a receipt for such sum and addition when paid.

104. The goods taken as provided in the next preceding section, shall (whether payment be requested by the owner or person entering the same, or not) belong to the Crown from the time they are so taken as aforesaid, and shall be sold or otherwise dealt with in such manner as shall be provided by any regulation in that behalf, or as the minister of customs shall direct; and the net proceeds of the sale of any such goods shall be applied first to the repayment to the consolidated revenue fund of the sum so paid to the owner or person entering such goods, and the remainder to or towards the payment of the lawful duty on the same.

105. If the net proceeds of any such sale exceeds the amount paid as aforesaid for the goods, and the amount of duty legally accruing thereon, then any part of the surplus, not exceeding 50 per cent. of such surplus, may under any regulation or order of the governor in council be paid to the collector, appraiser, or other officer concerned in the taking thereof, as a reward for his diligence.

106. The collector shall cause at least one package in every invoice or entry and at least one package in ten, if there be more than ten, in any invoice or entry, and so many more as he or any appraiser deems it expedient to examine for the protection of the revenue, to be sent to the examining warehouse, and there to be opened, examined, and appraised, the packages to be so opened being designated by the collector.

107. If any goods are found in any package which are not mentioned in the invoice or entry, such goods shall be seized and absolutely forfeited.

108. If any goods are found which do not correspond with the goods described in the invoice or entry, or if the description in the invoice or entry has been made for the purpose of avoiding payment of the duty or of any part of the duty on such goods, or if in any entry any goods have been undervalued for such purpose as aforesaid, such goods shall be seized and forfeited.

109. If the oath made with regard to any entry is willfully false in any particular—all the packages and goods included or pretended to be included, or which ought to have been included in such entry, shall be forfeited.

110. All the packages mentioned in any one entry, although some of such packages may have been delivered to the importer or any one on his behalf, shall be subject to the control of the customs authorities of the port at which they are entered, until such of the packages as have been sent for examination to the examining warehouse shall have been duly examined and approved; and a bond shall be given by the importer, conditioned that the packages so delivered shall not be opened or unpacked before the package or packages sent to the examining warehouse shall have been examined and passed as aforesaid.

111. Any package delivered without examination, or the goods, if lawfully unpacked, shall, if required by the collector of customs, be returned to the custom-house

within such time as may be mentioned in the bond, under the forfeiture of the penalty of such bond; provided, that the collector shall use due diligence in causing such examination to be made, and may, if he sees no objection, permit the remaining packages to be opened and unpacked as soon as those sent to the warehouse have been examined and approved.

112. The bond mentioned in the two next preceding sections may be a general bond covering the entries to be made by the importer for a period of twelve months from its date, and the penal sum shall be equal to the value of the largest importation made by the importer in question at any one time during the twelve months next immediately preceding; or if such importer has made no importations by which, in the opinion of the collector such penal sum can be properly fixed, the collector shall fix the amount thereof at such sum as he deems equitable.

113. The burden of proof that the proper duties payable with respect to any goods have been paid, and that all the requirements of this act with regard to the entry of any goods have been complied with and fulfilled, shall, in all cases, lie upon the party whose duty it was to comply with and fulfill the same.

114. The governor in council may, by regulation, direct that after any goods have been entered at the custom-house, and before the same are discharged by the officers and delivered into the custody of the importer or his agent, such goods shall be marked or stamped in such a manner or form as may be directed by such regulation for the security of the revenue, and by such officer as may be directed or appointed for that purpose.

115. When any person has occasion to remove from any port of entry to any other port or place, any goods duly entered, and on which the duties imposed by law have been paid, the collector or principal officer of the customs at such port on the requisition in writing of such person, within thirty days after the entry of such goods, specifying the particular goods to be removed, and the packages in which such goods are contained with their marks and numbers, shall give a permit or certificate in writing, signed by him, bearing date of the day it is made, and containing the like particulars, and certifying that such goods have been duly entered at such port and the duties paid thereon, and stating the port or place at which the same were paid, and the port or place to which it is intended to convey them, and the mode of conveyance, and the period within which they are intended to be so conveyed.

116. The warehousing ports already established and such ports of entry as the governor in council may from time to time appoint shall be warehousing ports.

117. The importer of any goods into Canada may enter the same for exportation, on giving security by his own bond with one sufficient security, for the exportation of the same goods, or may warehouse the same on giving such security by his own bond for the payment of the amount of all duties on such goods, and the performance of all the requirements of this act with regard to the same at such ports or places as aforesaid, and in such warehouses, and subject to such rules and regulations as may be from time to time appointed by the governor in council in that behalf, the penalty of the said bond to be double the amount of the duty to which such goods are subject.

118. During the regular warehouse hours, and subject to such regulations as the collector or proper officer of customs at any warehousing port sees fit to adopt, the owner of any warehoused goods may sort, pack, repack, or make any lawful arrangements respecting the goods warehoused, in order to the preservation or legal disposal thereof, and may take therefrom moderate samples, without present payment of duty or entry.

119. The owner of any warehoused goods may remove the goods under the authority of the collector or proper officer from any warehousing port to any other warehousing port in Canada, or from one warehouse to another in the same port, under good and sufficient bonds to the satisfaction of such officer.

120. Upon entry of goods at any frontier port or custom-house, under the authority and with the sanction of the collector or proper officer of customs at such port or custom-house, and under bonds to his satisfaction, and subject to such regulations as may be made in that behalf by the governor in council, the importer may pass the goods on to any port in any other part of Canada.

121. No transfer of the property in goods warehoused shall be valid for the purposes of this act unless the transfer be in writing signed by the importer or his duly authorized agent, or be made by process of law, and unless such transfer be produced to the collector or other proper officer of the proper port and be recorded by him in a book to be kept for that purpose in the custom-house. No such transfer of less than a whole package shall be valid, and no more than three transfers of the same goods shall be allowed before entry thereof for duty or for exportation.

122. Upon any such transfer of goods in warehouse being legally effected, as before provided, the proper officer may admit new security to be given by the bond of the new owner of the goods, and may cancel the bond given by the original owner of such goods, or may exonerate him to the extent of the new security so given; and



the new owner of any such goods shall then be deemed to be the importer thereof for the purposes of this act.

123. All warehoused goods shall be finally cleared, either for exportation or home consumption, within two years from the date of the first entry and warehousing thereof; and, in default thereof, the collector or proper officer may sell such goods for the payment, first, of the duties, and, secondly, of the warehouse rent and other charges; and the surplus, if any, shall be paid to the owner or his lawful agent; and the collector or proper officer may charge or authorize the occupier of the warehouse to charge a fair warehouse rent, subject to any regulation made by the governor in council in that behalf.

124. The collector may, if he sees no reason to refuse such permission, permit an importer to abandon to the Crown any whole package or packages of warehoused goods, without being liable to pay any duty on the same; and the same shall then be sold and the proceeds shall belong to the Crown, provided, that if such goods cannot be sold for a sum sufficient to pay the duties and charges, such goods shall not be sold but shall be destroyed.

125. The governor in council may, by regulation, dispense with or provide for the canceling of bonds for the payment of duties on goods actually deposited in a customs warehouse, on such terms and conditions and in such cases as he thinks proper.

126. It shall not be lawful for any person to make, or any officer of customs to accept, any bond, note, or other document for the purpose of avoiding or deferring the actual payment of duties legally accruing on goods imported into Canada, nor to arrange for deferring payment of such duties in any way, unless such goods are entered for warehouse and duly deposited therein according to the laws and regulations governing the warehousing of such goods.

127. Any collector or other officer of customs who shall allow the payment of duties of customs to be avoided or deferred for any cause or consideration whatever, except by regular entry for warehouse, shall be and become liable to forfeit a sum equal to the full value of such goods, and in addition thereto the amount of duty accruing thereon, which shall be recoverable from him or his sureties, or either of them, in the exchequer court or any court of competent jurisdiction in Canada; and any goods on which payment of duty may have been so avoided or deferred shall be liable to seizure and be dealt with as goods unlawfully imported into Canada.

128. If any goods entered to be warehoused are not duly carried into and deposited in the warehouse, or, having been so deposited, are afterwards taken out of the warehouse, without lawful permit, or, having been entered and cleared for exportation from the warehouse, are not duly carried and shipped, or otherwise conveyed out of Canada, or are afterwards relanded, sold, used, or brought into Canada, without the lawful permission of the proper officer of the customs, such goods shall be seized and forfeited.

129. All goods taken out of warehouse shall be subject to the duties to which they would be subject if then imported into Canada, and not to any other.

130. The importer of any cattle or swine may slaughter and cure and pack the same (or if such cattle or swine are imported in the carcasses, may cure and pack the same) in bond; and the importer of any wheat, maize, or other grain, may grind and pack the same in bond, providing such slaughtering, curing, grinding, and packing be done and conducted under such regulations and restrictions as the governor in council may, from time to time, make for that purpose; but the said regulations shall not extend to the substitution of other beef, pork, flour, or meal for the produce of such imported cattle or swine, wheat, maize, or other grain.

131. The importer or owner of any sugar, molasses, or other material from which refined sugar can be produced, may refine the same in bond, provided such refining be done and conducted under such regulations and restrictions as the governor in council may, from time to time, make for that purpose.

132. Duties shall be payable in all cases on the quantity and value of goods in the warehouse, as ascertained and stated on first entry, or as originally warehoused.

133. The unshipping, carrying, and landing of all goods, and the taking of the same to and from a customs warehouse or proper place after landing, shall be done in such manner, and at such places, as shall be appointed by the collector or proper officer of customs.

134. Unless otherwise provided by the governor in council, warehouse rent and expenses of safe-keeping in warehouse, and all expenses connected with the unshipping, carrying, and landing of goods and the taking of the same to and from a customs warehouse or proper place after landing shall be borne by the importer. If any such goods be removed from the place so appointed without leave of such collector or proper officer, they shall be seized and forfeited.

135. The governor in council may, from time to time, make regulations for the warehousing of goods, either for consumption, removal, exportation, or ship's stores, in any quantity not less than a whole package as originally warehoused, unless the said goods be in bulk, and then in quantities not less than one ton in weight, except

when a less weight may be the balance remaining of the original entry thereof for warehouse.

136. If after any goods have been duly entered, or landed to be warehoused, or entered and examined to be rewarehoused, and before the same have been actually deposited in the warehouse, the importer further enters the same or any part for home use or for exportation as from the warehouse, the goods so entered shall be considered as warehoused or rewarehoused, as the case may be, although not actually deposited in the warehouse, and may be delivered and taken for home use or for exportation.

137. Upon the entry outwards of any goods to be exported from the customs warehouse, either by sea or by land, or inland navigation, as the case may be, the person entering the same shall give security by bond in double the duties of importation on such goods, and with a sufficient surety, to be approved by the collector or proper officer, that the same shall, when the entry afore said is by sea, be actually exported, and when the entry aforesaid is by land or inland navigation, shall be landed or delivered at the place for which they are entered outwards, or shall in either case be otherwise accounted for to the satisfaction of the collector or proper officer, and that such proof or certificate that such goods have been so exported, landed, or delivered, or otherwise legally disposed of, as the case may be, as shall be required by any regulation of the governor in council, shall be produced to the collector or proper officer within a period to be appointed in such bond; and if any such goods are not so exported or are fraudulently relanded in or brought into Canada, in contravention of this act and of the said bond, they shall be seized and forfeited, together with any vessel, boat, or vehicle in which they are so relanded or imported.

138. If within the period appointed by the said bond, there be produced to the proper collector or officer of customs the written certificate of some principal officer of customs or colonial revenue at the place to which the goods were exported, or if such place be a foreign country, of any British or foreign consul or vice-consul, resident there, stating that the goods were actually landed and left at some place (naming it) out of Canada, as provided by the said bond, such bond shall be canceled; in case it be proved to the satisfaction of the proper collector or officer of customs that the said goods have been lost, such bond may be canceled.

139. Any person making any entry outwards of goods from warehouse for exportation not being the owner or duly authorized by the owner thereof, or the master of the vessel by which they are to be shipped, shall, for each offense, forfeit \$200.

140. Warehoused goods may be delivered as ships' stores for any vessel of the burden of 50 tons or upwards, bound on a voyage to a port out of Canada, the probable duration of which voyage out and home will not be less than thirty days; also for any vessel bound for and engaged in the deep-sea fishing, proof being first made by affidavit of the master or owner, to the satisfaction of the proper officer, that the stores are necessary and intended for the purposes aforesaid; provided that the minister of customs may define and limit the kind, quantity, and class of goods which may be so delivered as ships' stores. Should such stores or any part thereof be relanded, sold, or disposed of in Canada without due entry and payment of duty, such stores shall be seized and forfeited and the vessel for which the same were delivered from warehouse shall be seized and forfeited.

141. The master of every vessel bound outwards from any port in Canada to any port or place out of Canada, or on any voyage to any place within or without the limits of Canada, coastwise or by inland navigation, shall deliver to the collector or other proper officer an entry outwards under his hand, of the destination of such vessel, stating her name, country, and tonnage, the port of registry, the name of the master, the country of the owners, and the number of the crew; and before any goods or ballast are taken on board such vessel the master shall show that all goods imported in her, except such as were reported for exportation in the same vessel, have been duly entered, except that the proper officer may issue a stiffening order that such goods or ballast as may be specified therein may be laden before the former cargo is discharged. And before such vessel departs the master shall bring and deliver to the collector or other proper officer a content in writing under his hand of the goods laden and the names of the respective shippers and consignees of the goods, with the marks and numbers of the packages or parcels of the same, and shall make and subscribe a declaration to the truth of such content as far as any of such particulars can be known to him.

142. The master of every vessel, whether in ballast or laden, shall, before departure, come before the collector or other proper officer, and answer all such questions concerning the vessel, and the cargo, if any, and the crew, and the voyage, as may be demanded of him by such officer, and, if required, shall make his answers or any of them part of the declaration made under his hand, as aforesaid; and thereupon the collector or other proper officer, if such vessel is laden, shall make out and give to the master a certificate of the clearance of such vessel for her intended voyage with merchandise or a certificate of her clearance in ballast, as the case may be; and if there be merchandise on board, and the vessel is bound to any port in Canada, such clearance

shall state whether any and which of the goods are the produce of Canada, and if the goods are such as are liable to duties, whether the duties thereon have been paid; and in such case the master shall hand the clearance to the collector at the next port in Canada at which he arrives immediately on his arrival.

143. If any vessel departs from any port or place in Canada without a clearance, or if the master delivers a false content, or does not truly answer the questions demanded of him, or if, having received a clearance, such vessel adds to her cargo, or takes another vessel in tow, or performs any work without having mentioned in the report outwards the intention so to do, the master shall forfeit the sum of \$400; and the vessel shall be detained in any port in Canada until the said penalty be paid.

144. The governor in council may, by regulation, dispense with any of the requirements of the two last preceding sections which he deems it inexpedient to enforce, with regard to vessels engaged in the coasting trade or inland navigation.

145. Before a clearance is granted to any vessel bound to a port or place out of Canada, the owners, shippers, or consignors of the cargo on board such vessel shall deliver to the collector or proper officer of customs entries of such parts of the cargo as are shipped by them respectively, and shall verify the same by oath; and such entries shall specify the kinds and quantities of the articles shipped by them respectively, and the value of the total quantity of each kind of articles, and whether the said goods are of Canadian or of foreign production or manufacture; and such oath shall state that such entry contains a full, just, and true account of all articles laden on board of such vessel by such owners, shippers, or consignors respectively; and that the values of such articles are truly stated according to their actual cost or the value which they truly bear at the port and time of exportation; and in case the goods so shipped or any part thereof be liable by law to any export duty, the amount of such duty shall be stated in such entry; and no such entry shall be valid, and no clearance shall be granted to such vessel until such duty is paid to the collector or proper officer of customs.

146. The owners, shippers, or consignors of any goods consigned to a port or place out of Canada, to be transported by railway or other land conveyance, shall enter the same for exportation at the custom-house nearest to the place of lading; and such entry shall specify the kinds and quantities of the articles laden by them respectively, and the proper name and description of the railway over which such goods are to be transported, or of any other conveyance to be used for the same purpose; and shall verify the same by oath, and such oath shall be of the same form and tenor as that required from owners, shippers, or consignors of goods to be transported by sea; and if any of such goods are liable by law to any export duty, such duty shall be clearly stated upon such entry, and no railway car or other vehicle upon which such goods are laden shall be permitted to leave the limits of the port at which such entry should have been made until such duty is paid to the collector or proper officer of customs, and if any such car or vehicle be taken out of the limits of such port, contrary to the provision of this section, the company or person so taking the same shall be liable to a penalty of not more than \$400.

147. The owner, shipper, or consignor of any goods who shall refuse or neglect to make report and entry of the articles shipped or laden by them respectively, as required by the two last preceding sections, shall incur a penalty not exceeding \$200 for each such offence.

148. The governor in council may, by regulations to be, from time to time, made in that behalf, require such further information with regard to the description, quantity, quality, and value of goods exported from Canada, or removed from one port to another in Canada, to be given to the proper officer of the customs, in the entry of such goods outwards or otherwise, as he deems requisite for statistical purposes, whether such goods be exported or removed by sea, land, or inland navigation.

149. No entry outwards nor any shipping warrant or warrant for taking goods from warehouse for exportation shall be deemed valid, unless the particulars of the goods and packages shall correspond with the particulars in the entry inwards, nor unless they shall have been properly described in the entry outwards, by the character, denomination, and circumstances under which they were originally charged with duty; and any goods laden or taken out of the warehouse by an entry outwards or shipping warrant not so corresponding or not properly describing them, shall be seized and forfeited.

150. If the owner of any goods be resident more than ten miles from the office of the collector at the port of shipment, he may appoint an agent to make his entry outwards and clear and ship his goods; but the name of the agent and the residence of the owner shall be subjoined to the name in the entry and shipping warrant; and the agent shall make the declaration on the entry which is required of the owner, and shall answer the questions that shall be put to him. Any trading corporation or company may appoint an agent for the like purpose.

151. The report for entry, inwards and outwards, required by this act, may, in the case of any steam vessel carrying a purser, be made by such purser with the like effect in all

respects, and subject to the like penalty on the purser and the like forfeiture of the goods in case of any untrue report, as if the report were made by the master; and the word "master," for the purposes of this section, shall be construed as including the purser of any steam vessel; but nothing herein contained shall preclude the collector or proper officer of customs from calling upon the master of any steam vessel to answer all such questions concerning the vessel, passengers, cargo, and crew as might be lawfully demanded of him, if the report had been made by him, or to exempt the master from the penalties imposed by this act for failure to answer any such question, or for answering untruly, or to prevent the master from making such report if he shall see fit so to do.

152. Whenever the collector of customs at any port is satisfied that in such port as well as in the adjacent city or town and its vicinity, there does not exist an extraordinary, infectious, contagious, or epidemic disease, which could be transmitted by the vessel, her crew, or cargo, he may grant to any vessel requiring a bill of health a certificate, under his hand and seal, attesting the fact aforesaid, for which he shall be entitled to ask and receive a fee of one dollar.

153. If any person, with intent to defraud the revenue of Canada, smuggles or clandestinely introduces into Canada any goods subject to duty, or makes out or passes or attempts to pass through the custom-house any false, forged, or fraudulent invoice, or in any way attempts to defraud the revenue by evading the payment of the duty, or of any part of the duty on any goods, such goods shall be seized and forfeited; and every such person, his aiders and abettors shall, in addition to any other penalty or forfeiture to which he and they may be subject for such offence, be deemed guilty of a misdemeanor, and on conviction shall be liable to a penalty of not less than \$50 and not more than \$200, or to imprisonment for a term of not less than one month nor more than one year, or to both fine and imprisonment within the said limits, in the discretion of the court before whom the conviction is had.

154. If any person offers for sale any goods under pretense that the same are prohibited, or have been unshipped and run on shore, or brought in by land or otherwise without payment of duties, then and in such case all such goods (although not liable to any duties nor prohibited) shall be seized and forfeited, and every person offering the same for sale shall forfeit treble the value of such goods, or the penalty of \$200, at the election of the prosecutor, which penalty shall be recoverable in a summary way, before any one or more justices of the peace; and in default of payment on conviction, the party so offending shall be committed to any of Her Majesty's jails for a period not exceeding sixty days.

155. If any person knowingly harbors, keeps, conceals, purchases, sells or exchanges any goods illegally imported into Canada (whether such goods are dutiable or not), or whereon the duties lawfully payable have not been paid, such person shall, for such offense, forfeit treble the value of the said goods, as well as the goods themselves.

156. If any two or more persons in company are found together, and they or any of them have any goods liable to forfeiture under this act, every such person having knowledge of the fact, shall be guilty of a misdemeanor, and punishable accordingly.

157. Any person who, by any means, procures or hires or induces any person or persons to be concerned in the landing or unshipping, or carrying or conveying any goods which are prohibited to be imported, or for the landing of which permission has not been granted by the collector or proper officer of customs, shall, for every person so procured or hired or induced, forfeit the sum of \$100.

158. If any warehoused goods are concealed in or unlawfully removed from any customs warehouse in Canada, such goods shall be seized and forfeited, and any person concealing or unlawfully removing any such goods or aiding or abetting such concealing or removal, shall incur the penalties imposed on persons illegally importing or smuggling goods into Canada, and on discovery of such concealment or removal all goods belonging to the importer or owner of the concealed or removed goods then remaining in the same or any other warehouse, shall be placed under detention until the duty payable on the goods so concealed or removed and all penalties incurred by him shall have been paid; and if such duties and penalties are not paid within one month after the discovery of the concealment or removal of such goods, the goods so detained shall be dealt with in the same manner as goods unlawfully imported or smuggled into Canada.

159. If the importer or owner of any warehoused goods, or any person in his employ, by any contrivance opens the warehouse in which the goods are or gains access to the goods except in the presence of or with the express permission of the proper officer of the customs, such importer or owner shall for every such offense forfeit the sum of \$100.

160. If any person by any contrivance gains access to bonded goods in a railway car, or to goods in a railway car upon which goods the customs duties have not been paid, or delivers such bonded or other goods without the express permission of the

proper officer of customs, such person shall for every such offense be liable to be imprisoned for any period not less than one month nor more than one year.

161. Any person wilfully altering, defacing, or obliterating any mark, placed by any officer of customs, on any package of warehoused goods, or goods in transit, shall, for every such offense, forfeit the sum of \$500.

162. All vessels with the guns, tackle, apparel, and furniture thereof, vehicles, harness, tackle, horses, and cattle made use of in the importation or unshipping or landing or removal of any goods liable to forfeiture under this act, shall be seized and forfeited; and every person assisting or otherwise concerned in importing, unshipping, landing, or removal, or in the harboring of such goods, or into whose hands or possession the same knowingly come, shall forfeit treble the value of such goods, or the penalty of \$200 at the election of the party suing for the same; and the averment in any information or libel exhibited for the recovery of such penalty, that such party has elected to sue for the sum mentioned in the information or libel, shall be sufficient proof of such election, without any other evidence of the fact.

163. If any vessel is found hovering (in British waters) within one league of the coasts or shores of Canada, any officer of customs may go on board and enter into such vessels and stay on board such vessel while she remains within the limits of Canada or within one league thereof; and if any such vessel is bound elsewhere and so continues hovering for the space of twenty-four hours after the master has been required to depart by such officer of customs, such officer may bring the vessel into port and examine her cargo, and if any goods prohibited to be imported into Canada are on board, then such vessel with her apparel, rigging, tackle, furniture, stores, and cargo shall be seized and forfeited; and if the master or person in charge refuses to comply with the lawful directions of such officer or does not truly answer such questions as are put to him respecting such ship or vessel or her cargo, he shall forfeit and pay the sum of \$400.

164. Every person proved to have been on board any vessel or boat liable to forfeiture for having been found within one league of the coasts or shores of Canada, having on board or attached thereto or conveying or having conveyed anything subjecting such vessel or boat to forfeiture, or who shall be proved to have been on board any vessel or boat from which any part of the cargo shall have been thrown overboard or destroyed, or in which any goods shall have been unlawfully brought into Canada, shall forfeit \$100, provided such person shall have been knowingly concerned in such acts.

165. Officers of customs may board any vessel at any time or place and stay on board until all the goods intended to be unladen shall have been delivered; they shall have free access to every part of the vessel, with power to fasten down hatchways, the forecabin excepted, and to mark and secure any goods on board; and if any place, box or chest be locked, and the keys withheld, the officer may open the same. If any goods be found concealed on board they shall be seized and forfeited, and if any mark, lock, or seal upon any goods on board be wilfully altered, opened, or broken, before the delivery of the goods, or if any goods be secretly conveyed away, or if hatchways fastened down by the officer be opened by the master, or with his assent, the master shall forfeit \$400, and the vessel may be detained until the said fine be paid, or satisfactory security be given for the payment thereof.

166. The collector or other proper officer of the customs may station officers on board any ship while within the limits of a port, and the master shall provide every such officer with suitable accommodation and food, under a penalty of \$200.

167. If any person at any time forges or counterfeits any mark or brand to resemble any mark or brand provided or used for the purposes of this act, or forges or counterfeits the impression of any such mark or brand, or sells or exposes to sale, or has in his custody or possession, any goods with a counterfeit mark or brand, knowing the same to be counterfeit, or uses or affixes any such mark or brand to any other goods required to be stamped as aforesaid, other than those to which the same was originally affixed, such goods so falsely marked or branded shall be seized and forfeited, and every such offender, and his aiders, abettors or assistants, shall, for every such offense, forfeit and pay the sum of \$200, which penalty shall be recoverable in a summary way, before any two justices of the peace in Canada; and in default of payment the party so offending shall be committed to any of Her Majesty's jails in Canada, for a period not less than two months and not exceeding twelve months.

168. If any person counterfeits or falsifies, or uses when so counterfeited or falsified, any paper or document required under this act, or for any purpose therein mentioned, whether written, printed, or otherwise, or by any false statement, procures such document, or forges or counterfeits any certificate relating to any oath, or declaration or affirmation hereby required or authorized, knowing the same to be so forged or counterfeited, such person shall be guilty of a misdemeanor, and being thereof convicted, shall be liable to be punished accordingly.

169. If any wilfully false oath, affirmation, or declaration be made in any case where, by this act, an oath, affirmation or declaration is required or authorized, the

party making the same shall be guilty of wilful and corrupt perjury, and liable to the punishment provided for that offense.

170. If any person required by this act or by any other law to answer questions put to him by any officer of the customs, refuses to answer or does not truly answer such questions, the person so refusing or not truly answering such questions, shall, over and above any other penalty or punishment to which he becomes subject, forfeit the sum of \$400.

171. Every officer and person employed under the authority of any act relating to the collection of the revenue, or under the direction of any officer in the customs department, or being an officer of the said department, shall be deemed and taken to be duly employed for the prevention of smuggling; and in any suit or information, the averment that such party was so duly employed shall be sufficient proof thereof.

172. Any such officer or person as mentioned in the next preceding section, and any sheriff or justice of the peace, or person residing more than 10 miles from the residence of any officer of customs and thereunto authorized by any collector of customs or justice of the peace, may, upon information, or upon reasonable grounds of suspicion, detain, open and examine any package suspected to contain prohibited property or smuggled goods, or goods respecting which there has been any violation of any of the requirements of this act, and may go on board of and enter into any vessel or vehicle of any description whatsoever, and may stop and detain the same, whether arriving from places beyond or within the limits of Canada, and may rummage and search all parts thereof, for such goods; and if any such goods are found in any such vessel or vehicle, the officer or person so employed may seize and secure such vessel or vehicle, together with all the sails, rigging, tackle, apparel, horses, harness, and all other appurtenances which, at the time of such seizure, belong to or are attached to such vessel or vehicle, with all goods and other things laden therein or thereon, and the same shall be seized and forfeited.

173. Any officer or person in the discharge of the duty of seizing goods, vessels, vehicles, or property liable to forfeiture under this act, may call in such lawful aid and assistance in the Queen's name, as may be necessary for securing and protecting such seized goods, vessels, vehicles, or property; and if no such prohibited, forfeited or smuggled goods are found, such officer or person, having had reasonable cause to suspect that prohibited, forfeited, or smuggled goods would be found therein, shall not be liable to any prosecution or action at law for any such search, detention or stoppage.

174. Every master or person in charge of any vessel, and every driver or person conducting or having charge of any vehicle or conveyance, refusing to stop when required to do so by an officer of customs, or person employed as such, in the Queen's name, and any person being present at any such seizure or stoppage, and being called upon in the Queen's name by such officer or person to aid and assist him in a lawful way, and refusing so to do, shall forfeit and pay the sum of \$200, which penalty shall be summarily recovered before any two justices of the peace in Canada, or before any judge or magistrate having the powers of two justices of the peace; and in default of payment the offender shall be committed to any jail in Canada, for a period not exceeding six months.

175. Any officer of customs having first made oath before a justice of the peace that he has reasonable cause to suspect that goods liable to forfeiture are in any particular building, or in any yard or other place, open or inclosed, may, with such assistance as may be necessary, enter therein at any time between sunrise and sunset, but if the doors are fastened, then admission shall be first demanded, and the purpose for which entry is required declared, when, if admission shall not be given, he may forcibly enter; and when in either case entry shall be made, the officer shall search the premises, and seize all goods subject to forfeiture; these acts may be done by an officer of customs without oath or the assistance of a justice of the peace, in places where no justice resides, or where no justice can be found within five miles at the time of search.

176. If any building be upon the boundary line between Canada and any foreign country, and there is reason to believe that dutiable goods are deposited or have been placed therein, or carried through or into the same, without payment of duties and in violation of law, and if the collector or proper officer of customs makes oath before any justice of the peace that he has reason to believe as aforesaid, such collector or officer shall have the right to search such building and the premises belonging thereto, so far as the same may be within the limits of Canada, and if any such goods be found therein the same shall be seized and forfeited; and any merchant or the person who shall have been guilty of a violation of the provisions of this section shall be punishable by a fine of not less than \$200 nor more than \$1,000.

177. Upon application by or on behalf of the attorney-general of Canada to the exchequer court of Canada, or any judge thereof in chambers, such court or judge shall grant a writ of assistance for such officer or officers of customs as may be named in the application. Such writ shall have force and effect over the whole of Canada,

unless upon the application of the attorney-general it be limited to some part or parts thereof. Such writ shall remain in force so long as any person named therein remains an officer of the customs, whether in the same capacity or not, or until such writ is revoked by the minister of customs.

178. Every writ of assistance granted before the coming into force of this act, under the authority of the acts hereby repealed shall remain in force, notwithstanding such repeal, as if such acts had not been repealed.

179. Under the authority of a writ of assistance any officer of the customs, or any person employed for that purpose with the concurrence of the governor in council, expressed either by special order or appointment or by general regulation, may enter at any time in the day or night into any building or other place within the jurisdiction of the court granting such writ, and may search for and seize and secure any goods liable to forfeiture under this act, and in case of necessity, may break open any doors and any chests or other packages for that purpose.

180. Any officer of customs, or person by him authorized thereunto, may search any person on board any vessel or boat within any port in Canada, or in any vessel, boat or vehicle entering Canada by land or inland navigation, or any person who may have landed or got out of such vessel, boat, or vehicle, or who may have come into Canada from a foreign country in any manner or way, provided the officer or person so searching has reasonable cause to suppose that the person searched may have goods subject to entry at the customs, or prohibited goods, secreted about his person; and whoever obstructs or offers resistance to such search, or assists in so doing, shall thereby incur a forfeiture of \$100; and any person who may be on board of or may have landed from or got out of such vessel, boat, or vehicle, or who may have entered Canada from a foreign country in any manner or way, may be questioned by such officer, as to whether he has any such goods about his person, and if he denies having any such goods, or does not produce such as he may have, and any such goods are found upon him on being searched, the goods shall be seized and forfeited, and he shall forfeit treble the value thereof: *Provided*, That before any person can be searched, as aforesaid, such person may require the officer to take him or her before some police magistrate, justice of the peace, or before the collector or chief officer of the customs at the place, who shall, if he sees no reasonable cause for search, discharge such person; but if otherwise he shall direct such person to be searched; and if a female, she shall not be searched by any but a female; and any such magistrate or justice of the peace or collector of customs may, if there be no female appointed for such purpose, employ and authorize a suitable female person to act in any particular case or cases.

181. Any officer required to take any person before a police magistrate, justice of the peace, or chief officer of customs, as aforesaid, shall do so with all reasonable dispatch; and if any officer requires any person to be searched without reasonable cause, such officer shall forfeit and pay any sum not exceeding \$40.

182. If any goods or property or vehicle, subject or liable to forfeiture under this act, or any other law relating to the customs, are stopped or taken by any police or peace officer, or any person duly authorized, such goods and property and vehicles shall be taken to the custom-house next to the place where the same were stopped or taken and there delivered to the proper officer authorized to receive the same within forty-eight hours after the same were stopped and taken.

183. If any such goods or property or vehicles are stopped or taken by such police or peace officer on suspicion that the same have been feloniously stolen, such officer shall carry the same to the police office to which the offender is taken, there to remain until and in order to be produced at the trial of the said offender; and in such case the officer shall give notice in writing to the collector or principal officer of Her Majesty's customs at the port nearest to the place where such goods have been detained, of his having so detained the said goods, with the particulars of the same, and immediately after the trial all such goods shall be conveyed to and deposited in the custom-house or other place appointed as aforesaid, and proceedings relative to the same shall be had according to law.

184. In case any police or peace officer, having detained such goods, neglects to convey the same to the custom-house, or to give notice of having stopped the same as before prescribed, such officer shall forfeit the sum of \$100; and such penalty shall be recoverable in a summary way before any one or more justices of the peace or any police magistrate, and in default of payment the party so offending shall be committed to any of Her Majesty's jails for a period not exceeding thirty days.

185. If any person whatever, whether pretending to be the owner or not, either secretly or openly, and whether with or without force or violence, takes or carries away any goods, vessel, vehicle, or other thing which have been seized or detained on suspicion, as forfeited under this act, before the same have been declared by competent authority to have been seized without due cause, and without the permission of the officer or person having seized the same, or of some competent authority, such person shall be deemed to have stolen such goods, being the property of Her Majesty, and to be guilty of felony, and shall be liable to punishment accordingly.

186. If any person, under any pretense, either by actual assault, force, or violence, or by threats of such assault, force, or violence, in any way resists, opposes, molests, or obstructs any officer of customs, or any person acting in his aid or assistance, in the discharge of his or their duty, under the authority of this act, or any other law in force in Canada, relating to customs, trade, or navigation, or wilfully or maliciously shoots at or attempts to destroy or damage any vessel belonging to Her Majesty, or in the service of the Dominion of Canada, or maims or wounds any officer of the Army, Navy, marine, or customs, or any person acting in his aid or assistance while duly employed for the prevention of smuggling and in execution of his or their duty—or if, any person is found with any goods liable to seizure or forfeiture, under this act or any other law relating to customs, trade, or navigation, and carrying offensive arms or weapons, or in any way disguised, or staves, breaks, or in any way destroys any such goods, before or after the actual seizure thereof, or scuttles, sinks, or cuts adrift any vessel, or destroys or injures any vehicle or animal, before or after the seizure, or wilfully and maliciously destroys or injures, by fire or otherwise, any custom-house or any building whatsoever in which seized, forfeited, or bonded goods are deposited or kept, such person being convicted thereof, shall be adjudged guilty of felony, and shall be punishable accordingly.

187. If any officer of the customs, or any person who, with the concurrence of the minister of customs, is employed for the prevention of smuggling, makes any collusive seizure, or delivers up, or makes any agreement to deliver up or not to seize any vessel, boat, carriage, goods, or thing liable to forfeiture under this act, or takes or accepts a promise of any bribe, gratuity, recompense, or reward for the neglect or non-performance of his duty, such officer or other person shall be guilty of a misdemeanor, and, on conviction, forfeit for every such offense the sum of \$500, and be imprisoned for a period not less than three months nor more than two years, and be rendered incapable of serving Her Majesty in any office whatever; and every person who gives, or offers or promises to give, or procure to be given, any bribe, recompense, or reward to, or makes any collusive agreement with, any such officer or person as aforesaid, to induce him in any way to neglect his duty, or to conceal or connive at any act whereby the provisions of this act, or any law relating to the customs, trade, or navigation, might be evaded, shall be guilty of a misdemeanor, and shall, on conviction, forfeit for every such offense the sum of \$500, and be imprisoned for a period not less than three months nor more than two years.

188. All penalties and forfeitures incurred under this act, or any other law relating to the customs or to trade or navigation, may, in addition to any other remedy provided by this act or by law, be prosecuted, sued for, and recovered, with full costs of suit, in the exchequer court of Canada, or in any superior court having jurisdiction in that province in Canada where the cause of prosecution arises, or wherein the defendant is served with process; and if the amount of any such penalty or forfeiture does not exceed \$200, the same may, in the Provinces of Ontario, Quebec, New Brunswick, Nova Scotia, British Columbia, Manitoba, and Prince Edward Island, respectively, also be prosecuted, sued for, and recovered in any county court or circuit court having jurisdiction in the place where the cause of prosecution arises, or where the defendant is served with process.

189. All penalties and forfeitures imposed by this act, or by any other act relating to the customs or to trade or navigation, shall, unless other provisions be made for the recovery thereof, be sued for, prosecuted, and recovered, with cost, by Her Majesty's attorney-general of Canada, or in the name or names of the commissioner of customs, or some officer or officers of the customs, or other person or persons thereunto authorized by the governor in council, either expressly or by general regulation or order, and by no other party.

190. All penalties and forfeitures imposed by this act, or by any other law relating to the customs or to trade or navigation, may, in the Province of Quebec, be sued for, prosecuted, and recovered, with full costs of the suit, by the same proceeding as any other moneys due to the Crown, and all suits or prosecutions for the recovery thereof shall, in that province, be heard and determined in like manner as other suits or prosecutions in the same court for moneys due to the Crown, except that in the circuit court the same shall be heard and determined in a summary manner; but nothing in this section shall affect any provisions of this act, except such only as relate to the form of proceeding and of trial in such suits or prosecutions as aforesaid.

191. Any prosecution or suit in the exchequer court of Canada, or in any superior court or circuit court of a province, for the recovery of any penalty or forfeiture imposed by this act, or by any other law relating to the customs or to trade or navigation, may be commenced, prosecuted, and proceeded with in accordance with any rules of practice, general or special, established by the court for Crown suits in revenue matters, or in accordance with the usual practice and procedure of the court in civil cases in so far as such practice and procedure may be applicable, and wherever not applicable, then in accordance with the directions of the court or a judge in chambers.



The venue in any such prosecution or suit may be laid in any county in the province, notwithstanding that the cause of prosecution or suit did not arise in such county.

192. Any judge of the court in which any prosecution or suit is brought for the recovery of any penalty or forfeiture as aforesaid may, upon being satisfied by affidavit that there is reason to believe that the defendant will leave the province without satisfying such penalty or forfeiture, issue a warrant under his hand and seal for the arrest and detention of the defendant in the common jail of the county, district, or place until he has given security (before and to the satisfaction of such judge or some other judge of the same court) for the payment of such penalty, with costs, in case judgment be given against him.

193. In any declaration, information, statement of claim, or proceeding in any such prosecution or suit, it shall be sufficient to state the penalty or forfeiture incurred, and the act or section under which it is alleged to have been incurred, without further particulars; and the averment that the person seizing was and is an officer of the customs shall be sufficient evidence of the fact alleged unless it be contradicted by some superior officer of the customs.

194. In every prosecution, information, suit, or proceeding brought under this act for any penalty or forfeiture, or upon any bond given under it, or in any matter relating to the customs or to trade or navigation, Her Majesty, or those who sue for such penalty or forfeiture, or upon such bond, shall, if they recover the same, be entitled also to recover full costs of suit; and all such penalties and costs, if not paid, may be levied on the goods and chattels, lands and tenements of the defendant, in the same manner as sums recovered by judgment of the court in which the prosecution is brought may be levied by execution, or payment thereof may be enforced by *capias ad satisfaciendum* against the person of the defendant under the same conditions and in like manner.

195. If in any case the attorney-general is satisfied that the penalty or forfeiture was incurred without intended fraud, he may enter a *nolle prosequi* on such terms as he may see fit, and which shall be binding on all parties; the entry of such *nolle prosequi* shall be reported to the minister of customs, with the reasons therefor.

196. In any prosecution, suits or other proceeding for the recovery of any penalty or forfeiture as aforesaid, or for an offense against this act or any other law relating to the customs, or to trade or navigation, the averment that the cause of prosecution or suit arose, or that such offense was committed, within the limits of any district, county, port, or place shall be sufficient, without proof of such limits, unless the contrary is proved.

197. If any prosecution or suit is brought for any penalty or forfeiture under this act, or any other law relating to the customs or to trade or navigation, and any question arises whether the duties have been paid on any goods, whether the same have been lawfully imported, or lawfully laden or exported, or whether any other thing hath been done by which such penalty or forfeiture would be avoided, the burden of proof shall lie on the owner or claimant of the goods, and not on the party bringing such prosecution or suit.

198. All vessels, vehicles, goods, and other things seized as forfeited under this act, or any other law relating to customs, or to trade or navigation, shall be placed in the custody of the nearest collector and secured by him, or if seized by an officer in charge of a revenue vessel, shall be retained on board thereof until her arrival in port, and shall be deemed and taken to be condemned, without suit, information, or proceedings of any kind, and may be sold, unless the person from whom they were seized, or the owner thereof, or some person on his behalf, within one month from the day of seizure, do give notice in writing to the seizing officer or other chief officer of the customs at the nearest port that he claims or intends to claim the same; and the burden of proof that such notice was duly given in any case shall always lie upon the person claiming.

199. Notwithstanding that no such notice has been given, proceedings for the condemnation of the things seized may be commenced and prosecuted to judgment.

200. So soon as proceedings have been commenced in any court for the condemnation of anything seized, notice thereof shall be posted up in the office of the clerk, registrar, or prothonotary of the court, and also in the office of the collector at the port at which the thing has been seized as aforesaid; and if it be a vessel, shall also be posted on a mast thereof, or on some other conspicuous place on board.

201. Any person desiring to claim anything seized after proceedings for condemnation thereof have been commenced must file such claim in the office of the clerk, registrar, or prothonotary of the court; such claim must state the name, residence, and occupation or calling of the person making it, and must be accompanied by an affidavit of the claimant or his agent having a knowledge of the facts, setting forth the nature of the claimant's title to the thing seized.

202. Before any claim can be filed the claimant shall give security to the satisfaction of the court or a judge thereof by bond in a penalty of not less than \$200, or by a de-

posit of money not less than that sum, for the payment of the costs of the proceedings for condemnation.

203. If within one month after the last posting of the notice, under section 200, no claim to the thing seized be duly made, and security for costs given in accordance with the provisions of this act and of the practice of the court, judgment by default for the condemnation of the thing seized may, with the leave of the court or a judge thereof, be entered.

204. Any collector of customs may, as may also any court or judge having competent jurisdiction to try and determine the seizure, with the consent of the collector at the place where the things seized are, order the delivery thereof to the owner, on the deposit with the collector in money of a sum at least equal to the full duty-paid value (to be determined by the collector) of the things seized and the estimated costs of the proceedings in the case; and any sum or sums of money so deposited shall be immediately deposited in some bank appointed for that purpose by competent authority, to the credit of the receiver-general of Canada, there to remain until forfeited in due course of law or released by order of the minister of customs; and in case such seized articles are condemned, the money deposited shall be forfeited.

205. If the thing seized be an animal or a perishable article, the collector at whose port the same is may sell the same so as to avoid the expense of keeping it or to prevent its becoming deteriorated in value. The proceeds of such sale shall be deposited in some chartered bank to the credit of the receiver-general of Canada, and shall abide the judgment of the court with respect to the condemnation of the thing seized, in case proceedings for condemnation be taken in court, or shall become the property of Her Majesty, in case the thing seized becomes condemned without proceedings in court: Provided always, that the collector shall deliver up such animal or perishable article to the claimant thereof upon such claimant depositing with him a sum of money sufficient in the opinion of the collector to represent the duty-paid value of the thing claimed and the costs of any proceedings to be taken in court for the condemnation of the thing seized. The money so deposited shall be paid into some chartered bank to the credit of the receiver-general of Canada, and shall be dealt with in the same manner as above provided for in the case of the proceeds of a sale of such thing.

206. If notice of intent to claim has been given, and the value of the goods or thing seized does not exceed \$100 and the prosecutor chooses to proceed under this section, he shall forthwith cause the goods to be valued by a competent appraiser, and if such appraiser certifies them to be under the said value, a summary information, in writing, may be exhibited in the name of the collector at or nearest to the place of seizure, or in the name of any officer authorized thereto by the minister of customs, before two justices of the peace, charging the articles seized as forfeited under some particular act and section thereof, to be therein referred to, and praying condemnation thereof; and the justices shall thereupon issue a general notice for all persons claiming interest in the seizure to appear at a certain time and place, there to claim the articles seized and answer the information, otherwise such articles will be condemned; and a copy of the notice shall, at least eight days before the time of appearance, be served upon the person from whose possession the things were taken, or shall be left at or affixed to the building or vessel in which they were seized, if any, and if there remaining, or at two public places nearest the place of seizure; if any person appears to answer the information, the justices shall hear and determine the matter in a summary manner and acquit or condemn the articles, but if no person appears, judgment of condemnation shall be given; and the justices, on condemnation, shall issue a warrant to the collector to sell the goods; and such two justices shall be deemed a court, and each of them to be a judge thereof, for the purposes of this act.

207. All prosecutions or suits for the recovery of any of the penalties or forfeitures imposed by this act, or any other law relating to the customs, may be commenced at any time within three years after the cause of prosecution or suit arose, but not afterwards; and the vessels, vehicles, goods, or things forfeited shall be liable to forfeiture during the same period.

208. An appeal shall lie from a conviction by any magistrate, judge, justice or justices of the peace under this act in the manner provided by law from convictions in cases of summary conviction in that province in which the conviction was had, on the appellant furnishing security, by bond or recognizance with two sureties, to the satisfaction of such magistrate, judge, justice or justices of the peace, to abide the event of such appeal.

209. And an appeal shall also lie from the exchequer court of Canada, the superior, county, and circuit courts, respectively, in cases where the amount of the penalty or forfeiture is such that if a judgment for a like amount were given in any civil case an appeal would lie; and such appeal shall be allowed and prosecuted on like conditions and subject to like provisions as other appeals from the same court in matters of like amount.

210. If the appeal be brought by Her Majesty's attorney-general, or a collector or officer of the customs, it shall not be necessary for him to give any security on such appeal.

211. In any case in which proceedings have been instituted in any court against any vessel, vehicle, goods, or thing, for the recovery of any penalty or forfeiture under this act, or any law relating to the customs, trade, or navigation, the execution of any decision or judgment for restoring the thing to the claimant thereof shall not be suspended by reason of any appeal from such decision or judgment, provided the claimant gives sufficient security, to be approved of by the court, or a judge thereof, to render and deliver the thing in question, or the value thereof, to the appellant, in case the decision or judgment so appealed from be reversed.

212. All sales of goods forfeited or otherwise liable to be sold under this act shall be by public auction, and after a reasonable public notice, and subject to such further regulations as may be made by the governor in council; but in any case the minister of customs may order vessels, goods, vehicles, or things forfeited to be disposed of as he may see fit, instead of being sold by public auction.

213. The proceeds, after deducting expenses, shall, unless it be otherwise provided, belong to Her Majesty for the public uses of the Dominion; but the net proceeds, or any portion thereof, may be divided between and paid to the collector or chief officer of the customs at the port or place where the seizure was made, and the officer or officers by whom the seizure was made, or the information given which led to the seizure, and any person who has given information or otherwise aided in effecting the condemnation of the thing seized, in such proportions as the governor in council may in any case or class of cases direct and appoint; but nothing herein contained shall be construed to limit or affect any power vested in the governor in council or the minister of customs to make and ordain any other plan or system for the distribution of such net proceeds, or with regard to the remission of penalties or forfeitures imposed by this act or any other law.

214. When any goods have been seized or detained under any of the provisions of this act, or of any law relating to the customs, the importer or exporter thereof, and the owner or claimant thereof, shall immediately, upon being required so to do by the collector or other proper officer of customs of the port where the seizure or detention took place, produce and hand over all invoices, bills, accounts, and statements of the goods so seized or detained, and of all other goods imported into Canada by him at any time within three years next preceding such seizure or detention; and shall also produce for the inspection of such collector or other officer, and allow him to make copies of, or extracts from, all books of account, ledgers, day-books, cash-books, letter-books, invoice-books, or other books wherein any entry or memorandum appears respecting the purchase, importation, cost, value, or payment of the goods so seized or detained, and of all other goods as aforesaid.

215. If any person required under the next preceding section to produce and hand over invoices, bills, accounts, and statements, or to produce for inspection books of accounts, ledgers, day-books, cash-books, letter-books, invoice-books, and other books, or to allow copies or extracts to be made therefrom, neglects or refuses so to do, he shall incur a penalty of not less than \$200 nor more than \$1,000.

216. If in any prosecution, information, or suit respecting any seizure made under this act, or any law relating to the customs, decision or judgment be given for the claimant, and if the judge or court before whom the case has been tried or brought certifies that there was probable cause of seizure, the claimant shall not be entitled to any costs of suit, nor shall the person who made such seizure be liable to any action, indictment, or other suit or prosecution on account of such seizure; and if any action, indictment, or other suit or prosecution account of his making or being concerned in the making of such seizure, the plaintiff, if probable cause is certified as aforesaid, shall not be entitled to more than twenty cents damages nor to any costs, nor shall the defendant in such prosecution in such case be fined more than ten cents.

217. Goods claimed to be exempt from duty under any act relating to duties of customs shall, in the entry thereof, be described and set forth in the words by which they are described to be free in the act or schedule; and goods not answering such description shall be seized and forfeited; or if the collector deems it expedient, he may detain the goods and report the case for the action of the commissioner of customs and the decision of the minister of customs, as provided in this act.

218. When any vessel, vehicle, goods, or thing has been seized or detained under any of the provisions of this act or of any law relating to the customs, or when it is alleged that any penalty or forfeiture has been incurred under the provisions of this act, or of any law relating to the customs, the collector or the proper officer shall forthwith report the circumstances of the case to the commissioner of customs.

219. The commissioner may thereupon notify the owner or claimant of the thing seized or detained, or his agent, or the person alleged to have incurred the penalty or forfeiture, or his agent, of the reasons for the seizure, detention, penalty, or forfeiture, and call upon him to furnish, within thirty days from the date of the notice, such evi-

dence in the matter as he may desire to furnish. Such evidence may be by affidavit or affirmation, made before any justice of the peace, any collector of customs, any commissioner for taking affidavits in any court, or any notary public.

220. After the expiration of the said thirty days, or sooner if the person so called upon to furnish evidence so desires, the commissioner may consider and weigh the circumstances of the case, and report his opinion and recommendation thereon to the minister of customs.

221. The minister may thereupon give his decision in the matter, respecting the seizure, detention, penalty, or forfeiture, and the terms (if any) upon which the thing seized or detained may be released, or the penalty or forfeiture remitted; and if the owner or claimant of the thing seized or detained, or the person alleged to have incurred the penalty, signifies in writing, by himself or his agent, his acceptance of the decision, he shall be bound thereby, and the terms thereof may be enforced and carried out, and in any action, suit or proceeding to recover any money claimed by virtue of such decision the person accepting the same shall not be at liberty to set up that the thing seized was not liable to seizure or detention, or that he had not incurred any penalty or forfeiture.

222. But if the said owner, or claimant, or person, or his agent, within twenty days after having been notified of the decision, gives to the minister of customs notice in writing that such decision will not be accepted, or if such twenty days elapse without such decision being accepted, proceedings for the condemnation of the thing seized or for the enforcement of the penalty or forfeiture may be taken without delay.

223. If the said decision be accepted as by this act provided, and if the terms thereof be not forthwith complied with, the minister of customs may elect either to enforce the terms of the decision or to take proceedings for the condemnation of the thing seized, or for the enforcement of the penalty or forfeiture.

224. If a term of the decision be that the thing seized or detained be released upon payment of a sum of money, and if such money be not paid forthwith after acceptance of the decision, and if the minister elects to enforce the decision, such thing may be sold and the net proceeds applied towards payment of such sum, the balance (if any) to be handed over to the person entitled thereto. If such net proceeds be not sufficient to pay such sum the person accepting the decision shall be liable to pay the amount of the deficiency, and the same may be recovered from him as a debt due to Her Majesty.

225. If after acceptance of the decision, the person required thereby to pay any sum of money as a penalty or forfeiture, does not forthwith pay the same, the amount thereof may be recovered from him as a debt due to Her Majesty.

226. No action, suit, or proceeding shall be commenced, no writ shall be sued out against, nor a copy of any process served upon any officer of the customs or person employed for the prevention of smuggling as aforesaid, or upon any officer of customs for anything done in the exercise of his office, until one month after notice in writing has been delivered to him, or left at his usual place of abode, by the attorney or agent of the party who intends to sue out such writ or process, in which notice shall be clearly and explicitly contained the cause of the action, the name and place of abode of the person who is to bring such action, and the name and place of abode of the attorney or agent; and no evidence of any cause of such action shall be produced except of such as is contained in such notice, and no verdict or judgment shall be given for the plaintiff, unless he proves on the trial that such notice was given; and, in default of such proof, the defendant shall receive a verdict, or judgment and costs.

227. Any such officer or person against whom any action, suit, or proceeding is brought on account of anything done in the exercise of his office, may, within one month after such notice, tender amends to the party complaining, or his agent, and plead such tender in bar to the action, together with other pleas; and if the court or jury (as the case may be) find the amends sufficient, judgment or verdict shall be given for the defendant, and in such case, or in case the plaintiff becomes non-suited, or discontinues his action, or judgment is given for the defendant upon demurrer or otherwise, then such defendant shall be entitled to full costs of defense; the defendant, by leave of the court in which the action is brought, may, at any time before issue joined, pay money into court as in other actions.

228. Every such action, suit, or proceeding must be brought within three months after the cause thereof, and laid and tried in the place or district where the facts were committed; and the defendant may plead the general issue and give the special matter in evidence; and if the plaintiff becomes non-suited or discontinues the action, or if upon a demurrer or otherwise judgment is given against the plaintiff the defendant shall recover full costs of defense.

229. If in any such action, suit, or proceeding, the court or judge before whom the action is tried certifies upon the record that the defendant in such action acted upon probable cause, then the plaintiff in such action shall not be entitled to more than 20 cents damages nor to any costs of suit, nor in case of a seizure shall the person who

made the seizure be liable to any civil or criminal suit or proceeding on account thereof.

230. In addition to the purposes and matters hereinbefore or hereinafter mentioned, the governor in council may from time to time, and in the manner hereinafter provided, make regulations for or relating to the following purposes and matters:

(1) For the warehousing and bonding of such cattle and swine as may be slaughtered and cured in bond, and of such wheat, maize, and other grain as may be ground and packed in bond, and of such sugar as may be refined in bond.

(2) For the branding and marking of all duty-paid goods and goods entered for exportation, and for regulating and declaring what allowances shall be made for tare on the gross weight of goods.

(3) For declaring what shall be coasting trade, or inland navigation, respectively, and how the same shall be regulated in any case or classes of cases, and for relaxing or dispensing with any of the requirements of this act, as to vessels engaged in such trade, on any conditions which he may see fit to impose.

(4) For appointing places and ports of entry, and warehousing and bonding ports, and respecting goods and vessels passing the canals, and respecting the horses, vehicles and personal baggage of travelers coming into Canada, or returning thereto, or passing through any portion thereof.

(5) For regulating or restricting the importation of spirits, wine, and malt liquors, or other goods requiring to be weighed, gauged, or tested for strength or quantity, and limiting or prescribing the kind and capacity of packages in which the same may be imported, and the conveyances by which and the ports or places at which the same may be landed and entered.

(6) For exempting from duty any flour or meal or other produce of any wheat or grain grown in and taken out of Canada into the United States to be ground, and brought back into Canada within two days after such wheat or grain has been so taken out to be ground, or any boards, planks, or scantling, the produce of any logs or timber grown in and taken out of Canada into the United States to be sawn, and brought back into Canada within seven days after such logs or timber were so taken out to be sawn.

(7) For regulating the quantity to be so taken out or brought in at any one time by any party, and the mode in which the claim to exemption shall be established and proved.

(8) For authorizing the appointment of warehouses, and regulating the security which shall be taken from warehouse keepers, the forms and conditions subject to which goods are to be warehoused, the mode of keeping goods in warehouse, and of removing such goods therefrom, and the amount of warehouse rent or license fees.

(9) For extending either by general regulation or by special order, the time for clearing warehoused goods, and for the transport of goods in bond from one port or place to another.

(10) For regulating the form in which transfers of goods in warehouse or bond from one party to another shall be entered.

(11) For exempting goods from duty as being the growth, produce, or manufacture of Newfoundland, if such exemption be provided for by any act relating to Customs, and for regulating the mode of proving such exemption.

(12) For transferring to the list of goods which may be imported into Canada free of duty, any or all articles (whether natural products or products of manufactures) used as materials in Canadian manufactures, and any such materials transferred to the free list by such order in council, shall be free of duty of customs for the time therein appointed for that purpose; and for granting a drawback of the whole or part of the duty paid on articles which may have been used in Canadian manufactures; or for granting a certain specific sum in lieu of any such drawback.

(13) For appointing the manner in which the proceeds of penalties and forfeitures shall be distributed.

(14) For authorizing the taking of such bonds and security as he deems advisable for the performance of any condition on which any remission or part remission of duty, indulgence or permission is granted to any party, or any other condition made with such party, in the matter relating to the customs or to trade or navigation; and such bonds, and all bonds taken with the sanction of the minister of customs expressed either by general regulation or by special order, shall be valid in law, and upon breach of any of the conditions thereof, may be sued and proceeded upon in like manner as any other bond entered into under this act or any other law relating to the customs.

(15) For any other purpose for which by this act, or any other law relating to the customs or to trade and navigation, the governor in council is empowered to make orders or regulations; it being hereby declared competent for him (if he deems it expedient) to make general regulations in any matter in which he may make a special order, and any such general regulation shall apply to each particular case within the extent and meaning thereof, as fully and effectively as if the same referred directly

to each particular case within the intent and meaning thereof, and the officers, functionaries, and parties had been specially named therein.

231. And whereas it frequently happens that goods are conveyed, directly through the Canadian canals or otherwise by land or inland navigation, from one part of the frontier line between the Dominion of Canada and the United States to another, without any intention of unloading such goods in Canada, and that travelers in like manner pass through a portion of Canada, or come into it, with their carriages, horses, or other cattle drawing the same, and personal baggage, with the intention of forthwith returning to the United States, or having gone to the United States from Canada, return to it with such articles, and though the bringing of such goods and other articles into Canada is strictly an importation thereof, it may nevertheless be inexpedient that duties should be levied thereon; with regard to all such cases as aforesaid, the governor in council may, from time to time, and as occasion may require, make such regulations as to him seem meet, and may direct under what circumstances such duty shall be or shall not be paid, and on what conditions it shall be remitted or returned, and may cause such bonds or other security to be given, or such precautions to be taken at the expense of the importer (whether by placing officers of the customs on board any such vessel or carriage or otherwise) as to him seem meet; and on the refusal of the importer to comply with the regulations to be so made, the duty on the goods so imported shall forthwith become payable; and all and every animal, vehicle, or goods of any kind, brought into Canada by any traveler, exempted from duty under such regulations or otherwise, shall, if sold or offered for sale in Canada, provided the duties thereon have not been previously paid, be held to have been illegally imported, and shall be seized and forfeited, together with the harness or tackle employed therewith or in the conveyance thereof.

232. In any regulation made by the governor in council, under this act, any oath or declaration may be prescribed and required which the governor in council deems necessary to protect the revenue against fraud, and any person or officer may be authorized to administer the same; and by any such regulation, a declaration may be substituted for an oath in any case where an oath is required by this act.

233. The governor in council may by proclamation or order in council, at any time, and from time to time, prohibit the exportation or the carrying coastwise or by inland navigation of the following goods: Arms, ammunition, and gunpowder, military and naval stores, and any articles which the governor in council shall judge capable of being converted into or made useful in increasing the quantity of military or naval stores, provisions, or any sort of victual which may be used as food by man; and, if any goods so prohibited be exported, carried coastwise, or by inland navigation, or waterborne, or laden in any railway carriage, or other vehicle, for the purpose of being so exported or carried, they shall be seized and forfeited.

234. The governor in council may grant yearly coasting licenses to British vessels navigating the inland waters of Canada above Montreal, and may direct that a fee of fifty cents shall be payable for each such license, and that the master or person in charge of any vessel navigating the said waters, and not having a coasting license, shall, on entering any port in the Dominion with such vessel, pay a fee of fifty cents if such vessel is not over fifty tons burthen, and of one dollar if she is more than fifty tons burthen, to the collector on each entry, and a like fee of fifty cents, or one dollar, according to the burthen of the vessel, on each clearance of such vessel at any port; and such fees shall be payable accordingly before such vessel shall be entered or cleared; provided that the governor in council may reduce or readjust such fees, but may not increase them; and provided also, that vessels merely passing through any of the Canadian canals, without breaking bulk, shall not be liable to such fees.

235. All goods shipped or unshipped, imported or exported, carried or conveyed contrary to any regulation made by the governor in council, and all goods or vehicles and all vessels under the value of \$400, with regard to which the requirements of any such regulations have not been complied with, shall be seized and forfeited, and if such vessel be of or over the value of \$400, the master thereof shall, by such non-compliance, incur a penalty of \$400, and the vessel may be detained until the said penalty is paid, or satisfactory security is given for the payment thereof; and any such forfeitures and penalties shall be recoverable and may be enforced in the same manner, before the same court and tribunal, as if incurred by the contravention of any direct provision of this act.

236. All general regulations made by the governor in council under this act, shall have effect from and after the day on which the same have been published in the Canada Gazette, or from and after such later day as may be appointed for the purpose in such regulations, and during such time as shall be therein expressed, or if no time be expressed for that purpose, then until the same are revoked or altered; and all such regulations may be revoked, varied, or altered by any subsequent regulation; and a copy of the Canada Gazette containing any such regulation shall be evidence of such regulation to all intents and purposes whatsoever.

237. Any copy of an order of the governor in council made in any special matter, and not being a general regulation, certified as a true copy by the clerk or assistant clerk of the Queens privy council for Canada, shall be evidence of such order to all intents and purposes whatsoever.

238. In every case where the person required to take any oath under any act or regulation relating to the customs, is one of the persons entitled by law to take a solemn affirmation instead of an oath in civil cases, such person may instead of the oath hereby required make a solemn affirmation to the same effect; and every person before whom any oath is, by any such act or regulation, required or allowed to be taken, or solemn affirmation to be made, shall have full power to administer the same; and the wilfully making any false statement in any such oath shall be perjury, and the wilfully making any false statement in such solemn affirmation shall be a misdemeanor punishable as perjury.

239. Whenever on the levying of any duty, or for any other purpose, it becomes necessary to determine the precise time of the importation or exportation of any goods, or of the arrival or departure of any vessel, such importation, if made by sea, coastwise, or by inland navigation in any decked vessel, shall be deemed to have been completed from the time the vessel in which such goods were imported came within the limits of the port at which they ought to be reported, and, if made by land or by inland navigation in any undecked vessel, then from the time such goods were brought within the limits of Canada; and the exportation of any goods shall be deemed to have been commenced from the time of the legal shipment of such goods for exportation, after due entry outwards, in any decked vessel, or from the time the goods were carried beyond the limits of Canada, if the exportation be by land or in any undecked vessel; and the time of the arrival of any vessel shall be deemed to be the time at which the report of such vessel was, is, or ought to have been made, and the time of the departure of any vessel to be the time of the last clearance of such vessel on the voyage for which she departed.

240. Although any duty of customs has been overpaid, or although after any duty of customs has been charged and paid, it appears or is judicially established that the same was charged under an erroneous construction of the law, no such overcharge shall be returned after the expiration of three years from the date of such payment, unless application for repayment has been previously made.

241. No refund of duty shall be allowed after the lapse of fourteen days from the time of entry, for any alleged misdescription of goods by the importer; and should any error of the kind be discovered by the importer while unpacking his goods, he shall immediately and without further interference with the goods, report the facts to the collector, in order that the same may be verified.

242. The governor in council may, under regulations to be made for that purpose, allow, on the exportation of goods which have been imported into Canada, and on which a duty of customs has been paid, a drawback equal to the duty so paid, with such deduction therefrom as may be provided in such regulations; and in cases to be mentioned in such regulations and subject to such provisions as may be therein made, such drawback or a specific sum in lieu thereof, may be allowed on duty-paid goods manufactured or wrought in Canada into goods exported there from as aforesaid; and the period within which such drawback may be allowed after the time the duty was paid shall be limited in such regulations.

243. All bonds and securities of what kind and nature soever authorized to be taken by any law relating to customs, trade, or navigation shall be taken to and for the use and benefit of Her Majesty, and such bonds shall be taken before the performance of any act or matter with regard to which the taking of any such bond or bonds is required.

244. All bonds, documents, and papers necessary for the transaction of any business at the respective custom houses or places or ports of entry in Canada, shall be in such form as the minister of customs shall from time to time direct.

245. Certificates and copies of official papers, certified under the hand and seal of any of the principal officers of the customs in the United Kingdom, or of any collector of colonial revenue in any of the British possessions in America or the West Indies, or other British possessions, or of any British consul or vice-consul in a foreign country, and certificates and copies of official papers made pursuant to this act or any act in force in Canada relating to the customs or revenue, shall be received as presumptive evidence in reference to any matter contained in this act or any act relating to the customs or on the trial of any suit in reference to any such matter.

246. Whenever any person makes any application to an officer of the customs to transact any business on behalf of any other person, such officer may require the person so applying to produce a written authority from the person on whose behalf the application is made, and in default of the production of such authority, may refuse to transact such business; and any act or thing done or performed by such agent shall be binding upon the person by or on behalf of whom the same is done or per-

formed, to all intents and purposes, as fully as if the act or thing had been done or performed by the principal.

247. Any attorney and agent duly thereunto authorized by a written instrument, which he shall deliver to and leave with the collector, may, in his said quality, validly make any entry, or execute any bond or other instrument required by this act, and shall thereby bind his principal as effectually as if such principal had himself made such entry or executed such bond or other instrument, and may take the oath hereby required of a consignee or agent, if he be cognizant of the facts therein averred; and any instrument appointing such attorney and agent shall be valid if in the form prescribed by the minister of customs.

248. Any partner in an incorporated company, association, or copartnership of persons, or their attorney and agent authorized as aforesaid, may, under the name and style usually taken by such company, association, or copartnership, make any entry or execute any bond or other instrument required by this act, without mentioning the name or names of any of the members or of the other members of the company or association or partnership, and such entry, bond, or instrument shall nevertheless bind them as fully and effectually, and shall have the same effect in all respects as if the name of every such member or partner had been therein mentioned and he had signed the same, and (if it be a bond or other instrument under seal) as if he had thereunto affixed his seal and had delivered the same as his act and deed; and the seal thereunto affixed shall be held to be the seal of each and every such member or partner as aforesaid; and the provisions of this section shall apply to any instrument by which any company, association, or partnership of persons appoint an attorney or agent to act for them under the next preceding section. The person who, under this section, makes any entry or executes any bond or instrument on behalf of any company, association, or partnership, shall, under the name and style usually taken by them, write his own name with the word "by" or the words "by their attorney," or words to the like effect, as the case may be, thereunto prefixed.

*SCHEDULE.—Acts repealed subject to the provisions made in section 3 of this act.*

1. The act passed in the fortieth year of Her Majesty's reign, chaptered ten, and entitled "An act to amend and consolidate the acts respecting the customs."

2. The act passed in the forty-fourth year of Her Majesty's reign, chaptered eleven, and entitled "An act to amend the act, fortieth Victoria, chapter ten, entitled 'An act to amend and consolidate the acts respecting the customs.'"

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Existing, to remain in force .....	178	
Powers given for effective searching by day or night .....	179	
<b>Yard:</b> Power of officer to enter, &c. ....	175	



## NOTES.

**Agricultural machines in France.**—Consul Charles P. Williams writes from Rouen, September 27, 1886:

The systematic and persevering efforts of manufacturers of American agricultural implements to effect sales in France have not been as well rewarded in the past year as they deserved. The low price of grain has affected the French farmers, and influenced their buying capacity. At an exhibition of mowing and reaping machines held in this consular district last month, I was gratified to see sixteen machines all at work at the same time. Twelve of these were of American manufacture, and the other four more or less imitations of American machines. All, or nearly all, of our best makers were represented, and their machines, as a general thing, were well looked after. Thousands of farmers, workmen, and women, land proprietors, &c., witnessed this exhibition, many with astonishment and curiosity, all with admiration and wonder. These machines, with their attendants, were brought from Paris at great expense and inconvenience, and the slightest circumstance can materially affect their success. It appeared to me that the English mower and reaper, certainly an excellent machine (as it could not fail to be, having well imitated our best machines), owed its success to the fact that an American competing machine required a yard of wire, not procurable on the grounds, and for which part of the driver's whip-lash was substituted. One of the horses before another machine was a three-year-old colt, evidently unused to the sound of mowing-machines, and, having discovered that the one behind him only made a noise when he moved, refused to go forward. However, the prizes were fairly awarded, and the Americans bore off their share. The president of the agricultural society, at the banquet which wound up the day of the assemblage of mowing and reaping machines, paid a well-merited tribute to our machines, and urged upon all to avail themselves of their services. The mowers and reapers, without the binders, seem to be preferred, as the climate is damp, and much grass is bound up with the straw, and there is great danger of the rotting of the straw or sprouting of the grain if bound up so soon after reaping.

*Amount of grain entered at the port of Rouen from the 1st to the 22d October, 1886.*

Date.	Whence entered.	Articles.	Quantity.
			<i>Kilograms.</i>
Oct. 1	Buenos Ayres .....	Corn .....	820, 000
Oct. 2	Pontienl .....	Oats .....	50, 000
Oct. 3	Buenos Ayres .....	Corn .....	1, 000, 000
Oct. 9	Liban .....	Oats .....	904, 000
Oct. 11	Buenos Ayres .....	Corn .....	920, 000
Oct. 11	do .....	do .....	2, 204, 000
Oct. 11	Zarate .....	do .....	730, 000
Oct. 12	do .....	do .....	750, 000
Oct. 12	Baradero .....	do .....	640, 000
Oct. 12	New Orleans .....	Wheat .....	1, 655, 000
Oct. 13	Buenos Ayres .....	Corn .....	750, 000
Oct. 13	Zarate .....	do .....	550, 000
Oct. 13	New Orleans .....	do .....	2, 240, 000
Oct. 14	Sulina .....	do .....	2, 100, 000
Oct. 14	Buenos Ayres .....	do .....	1, 000, 000
Oct. 15	do .....	do .....	2, 400, 000
Oct. 15	do .....	do .....	2, 800, 000

### SUMMARY.

Corn .....	kilograms ..	18, 910, 000
Oats .....	do .....	1, 053, 000
Wheat .....	do .....	1, 655, 000
Total .....		21, 618, 000

**Camphor in China.**—Consul Seymour, of Canton, China, writes as follows, under date of October 18, 1886:

As a commodity of commerce camphor in this vicinity is of little importance. At only one of the nineteen ports of China where offices of the imperial maritime customs are established does camphor appear among the items of export or traffic, and that single port is Tamsui, in Northern Formosa, and from the customs reports of that place it appears to have nearly ceased as an item of export or traffic on account of "the camphor forests on the hills of Formosa having been burned over by the Chinese to acquire, by all possible means, as much territory as possible, and in order to compel the savages to withdraw. Forests of camphor trees do still exist further inland on the island of Formosa, but as yet they are difficult of access." The mount-sincers retaliated by serious raids upon the Chinese between the mountains and the coast. It is a matter of much uncertainty whether the camphor forests of the mountains of Formosa will escape destruction by continuance of hostilities, which are probable, as revenge.

**Trade at Carupano, Venezuela.**—Consular Agent Quesnel, of Carupano, writes as follows, under date of October 1, 1886:

The quarter ended September 30, 1886, is very poor in results, as is customary at this time of the year. We have seen no American flag in port, and the exports have been small. Exports of cocoa have somewhat increased, but results have not been encouraging. The country begins to recover from the ravages of the grasshopper. Corn is, however, very scarce and sold at \$7.70, American gold, for 275½ pounds avoirdupois. In this amount is included the sum of \$2.69, American gold, for customs duties.

Trade between Carupano and New York is carried on per British steamer *El Cal-lao*, arriving once each month. This steamer carries the British flag, although her owners reside in the United States; thus, the statistics of her trade are placed to the account of England, although the trade is really made with the United States.

It may be confidently stated that the coming cocoa crop will be abundant, and that the trade with this port for next year should be large and profitable. The mining interests are also assuming importance, and considerable export of ores may be soon expected. It is a source of regret that Americans pay so little attention to this portion of Venezuela.

**Trade of Austria-Hungary.**—Consul-General Jussen writes as follows, under date of October 19, 1886:

The total value of the declared exports from the several consular districts of Austria-Hungary for the quarter ending September 30, 1886, is \$2,263,830.47, being an increase of \$510,164.71 as compared with the same quarter of 1885.

An increase is shown in the consular districts of Vienna, Prague, and Budapesth, while in the consular district of Trieste a decrease will be noted.

The increase in the consular districts of Prague, Vienna, and Budapesth affects mainly the following articles:

In the consular district of Vienna:

Buttons .....	\$17,348 39
Fancy goods and jewelry .....	17,252 05
Linen and cotton goods .....	63,542 58
Cloth and woolen goods .....	14,676 24
Furniture .....	4,568 25
Silks and velvets .....	4,298 15

In the consular district of Prague:

Beet-root sugar .....	56,469 47
Cutlery .....	5,080 17
Glassware .....	164,680 18
Gloves .....	41,381 66
Porcelain and pottery .....	87,272 38

In the consular district of Budapesth:

Mineral water .....	12,795 51
Tartar, crude .....	10,392 89

The decrease in the consular district of Trieste affects mainly the following articles:

Fruits, dried .....	9,205 4
Insect powder .....	16,407 37
Petroleum barrels, empty .....	54,558 44

In the above tabular statement I have included the returns from the commercial agency of Reichenberg in the returns from the consular district of Prague, for the reason that until the close of the last quarter the exports from Reichenberg were al-

ways included in the exports from the consular district of Prague, and I have, therefore, confined the calculation of increase to the Prague district.

**Trade of Newcastle-upon-Tyne.**—Consul Joseph Smith, of Newcastle-upon-Tyne, writes as follows, under date of October 12:

The Digest of Invoice Book for this consular district for the quarter ending September 30, 1886, shows shipments during the quarter of \$446,111.42, as against \$411,847.56 for the corresponding quarter of last year, showing an increase of \$34,263.86. The declared exports from this district to the United States during the year ending September 30, 1886, show a fair increase upon the trade of last year, that increase being \$154,684.84. The increase is not large, but it is encouraging to business men here, and leads them to hope for still more favorable trade during the next year. In fact, although there is still great depression in every branch of business in this district, there is a more hopeful feeling in commercial circles and in the great industrial establishments in the north of England. There was a decrease of shipment during the last quarter of the year 1885, amounting to \$97,652.70.

It is therefore worthy of note that the increase during the part of the year 1886 covered by this report is sufficient to cover that deficiency and make a creditable advance upon the amount of shipments for the commercial year; in other words, that the increase during the nine months of the year 1886 has been \$244,337.48. As the prices of goods of all kinds have been very low during the time covered by this report, the increase in the money value of the shipments shows a very respectable enlargement in the bulk of the exports.

**Trade of Hamilton, Ontario.**—Consul Roberts, of Hamilton, Ontario, under date of November 5, writes as follows:

Herewith is submitted a statement of the aggregate values of free and dutiable goods imported at Hamilton for the year ended September 30, 1886:

Countries.	Dutiable.	Free.
United States.....	\$1,579,687	\$855,667
Great Britain.....	1,476,685	378,940
Other countries.....	16,845	290,370
Total.....	2,843,217	1,334,017

Coal imported from United States, included in above:

Anthracite.....	tons..	68,797
Bituminous.....	do..	62,634
Coke.....	do..	1,635
Screenings and dust.....	do..	983

Total..... 132,049

Raw leaf-tobacco imported from United States.....	pounds..	1,304,881
Raw cotton imported from United States.....	do..	3,870,273

# BRITISH NORTH AMERICA.

Exports declared for the United States during the three quarters ending September 30, 1896.

[Compiled from the consular returns, by C. W. Seawell.]

## BRITISH COLUMBIA.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Victoria	Coal.....	\$211,343 00	\$212,757 84	\$239,635 50	\$663,736 34
	Furs, skins, and hides.....	38,721 71	105,136 50	148,257 46	292,115 67
	Guns.....		689 00		689 00
	Household and personal effects.....		6,495 40		6,495 40
	Rice and Chinese goods.....	195 10	2,701 55	3,242 83	6,139 48
	Salmon, fish-oil, and coal-oil.....	1,681 15			1,681 15
	Salmon and oolichans.....		345 00	18,116 00	18,461 00
	Seal-skins.....			188,652 11	188,652 11
	Skidegats and fish-oil.....		6,835 00	2,827 50	9,662 50
	Tobacco and liquors.....	6,503 18	8,230 00	734 16	15,467 34
	Treasure.....	64,513 19	133,730 26	215,771 91	413,815 36
	Wool.....	170 70			170 70
	Miscellaneous and household goods.....	1,251 89	2,149 44	10,261 05	13,662 38
	Total.....	324,179 92	479,069 99	827,498 52	1,630,748 43

## MANITOBA.

Emerson	Barley.....	739 50			739 50
	Beer-kegs, returned.....	484 00			484 00
	Bulls for breeding.....	250 00			250 00
	Cattle.....		75 00		75 00
	Cows for breeding.....	200 00			200 00
	Fresh fish.....	2,835 00			2,835 00
	Furs, raw.....			175 00	175 00
	Grains.....		650 00		650 00
	Hides.....	217 00	113 00	150 00	480 00
	Horses and mules.....	1,167 00	8,295 00	305 00	9,767 00
	Household goods.....	143 50			143 50
	Machinery, &c., second-hand.....			1,146 00	1,146 00
	Mares for breeding.....	2,000 00		1,695 00	3,695 00
	Oats.....			128 48	128 48
	Piano, returned.....	350 00			350 00
	Snakeroot.....		4,330 50	3,714 50	8,045 00
	Stallions for breeding.....	1,970 00			1,970 00
	United States manufacture, re- turned.....			470 00	470 00
	Miscellaneous.....		2,139 28		2,139 28
	Total.....	10,356 00	15,602 78	7,783 98	33,742 76
In bond:	Salmon from San Francisco, Cal., via Canadian Pacific Railway.....			9,880 00	9,880 00
	Canned fruit from San Francisco, Cal., via Ca- nadian Pacific Railway.....			5,473 00	5,473 00
					15,353 00

## DECLARED EXPORTS.

Exports declared for the United States, &amp;c.—Continued.

## MANITOBA—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Wakopa	Bones			\$96 00	\$96 00
	Live stock and personal effects	\$1,684 00		3,375 00	5,059 00
	Live stock, contractor's outfit, and personal effects		\$10,696 00		10,696 00
	Lumber			458 03	458 03
	Total	1,684 00	10,696 00	3,929 03	16,309 03
Winnipeg	Apples, dried		398 30		398 30
	Barley	2,400 00			2,400 00
	Books	182 00			182 00
	Cattle			50,040 00	50,040 00
	Coal	119 00			119 00
	Emigrants' effects	9,016 00	5,889 75	4,273 00	19,178 75
	Empty beer-kegs	537 00	3,156 50	3,049 95	6,743 45
	Fish:				
	Fresh	34,391 69	300 00		34,691 69
	Salted	2,340 00			2,340 00
	Furs, undressed	26,361 50	66,948 35	35,447 05	128,756 90
	Gatling gun		1,500 00		1,500 00
	Gold dust		300 00	300 00	600 00
	Gold ore	400 00			400 00
	Hides, undressed	4,179 08		3,108 00	7,287 08
	Horses	3,525 00		100 00	3,625 00
	Lumber	219 00			219 00
	Mill rollers		890 00		890 00
	Oats			328 72	328 72
	Oil-cake	274 94			274 94
	Operatic costumes	900 00			900 00
	Rags	65 00			65 00
	Railroad, outfit for constructing		22,985 85		22,985 85
	Seneca root		1,252 80	5,777 26	7,030 06
	Silver ore			1,452 00	1,452 00
	Typewriters		150 00		150 00
	Wheat	609 33			609 33
	Total	85,519 54	103,221 55	103,875 98	292,617 07

## NEW BRUNSWICK.

Fredericton	Bark, hemlock		4,162 00	703 00	4,865 00
	Barrels, empty	187 80	55 80		243 60
	Boards:				
	Spruce		312 27		312 27
	Hemlock		182 00	216 00	398 00
	Cloth	183 29			183 29
	Fish	268 63	37 50		306 13
	Laths		1,690 60	686 87	3,377 47
	Mare	225 00			225 00
	Potatoes	3,026 20	1,078 75		4,104 95
	Potato starch		4,000 00	4,500 00	8,500 00
	Railroad ties		5,412 00	1,040 00	6,452 00
	Shingles	1,604 25	3,472 43	6,626 00	11,702 68
	Miscellaneous			640 08	640 08
	Total	5,495 17	20,403 35	14,411 95	40,310 47
Grand Manan	Bloaters	45 00			45 00
	Dishes		11 85		11 85
	Dulce		15 50	3 00	18 50
	Eggs	16 40			16 40
	Herring, frozen	375 00			375 00
	Herring, smoked	7,669 88	8,698 32	7,553 57	24,116 77
	Pumice	912 00			912 00
	Pollock, dry	194 25		171 50	365 75
	Scrap, dry	400 00			400 00
	Miscellaneous			2 75	2 75
	Total	9,612 53	8,920 67	7,730 82	26,264 02
McAdam	Antimony ore			800 00	800 00
	Bull, Jersey			150 00	150 00
	Cedar posts		880 05		880 05
	Cedar poles		80 00		80 00

Exports declared for the United States, &amp;c.—Continued.

## NEW BRUNSWICK—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
McAdams—Continued.	Cedar sleepers .....	\$906 64	\$2,246 86		\$3,153 50
	Fire-brick .....		96 00		96 00
	Hay .....	618 25	84 00		702 25
	Hemlock bark .....	5,858 00	2,640 00	\$5,664 00	13,662 00
	Horses .....			400 00	400 00
	Mares for breeding .....		250 00	460 00	710 00
	Oats .....	228 50			228 50
	Potatoes .....	3,107 30	3,008 50		6,115 80
	Sheep and lambs .....			3,459 49	3,459 49
	Shingles .....	225 00			225 00
	Turnips .....		60 00		60 00
	Wagons, second-hand .....		15 00	20 00	35 00
	Miscellaneous .....		4 50	84 00	88 50
	Total .....	9,484 91	10,443 69	11,037 49	30,966 09
Moncton .....	Bags .....			119 38	119 38
	Boards .....			702 50	702 50
	Boneblack .....			1,516 68	1,516 68
	Building stone .....			802 50	802 50
	Calcined plaster .....		8,744 97	5,730 48	14,475 45
	Cedar posts .....			527 50	527 50
	Cotton waste .....	138 42	569 81	597 43	1,305 66
	Firewood .....		352 50	247 50	600 00
	Fish, frozen .....	4,597 50			4,597 50
	Hemlock bark .....		365 50	2,531 00	2,896 50
	Hemlock boards .....			882 50	882 50
	Horses .....	490 50	6,326 50	1,757 50	8,574 50
	Household goods .....	528 00	6,655 00	2,304 50	9,547 50
	Laths .....			1,947 50	1,947 50
	Lumber .....		899 44	3,888 33	4,782 77
	Potatoes .....	202 50	849 50		552 00
	Railway ties .....		37,958 50	16,556 50	54,510 00
	Rock plaster .....		5,750 00	13,314 25	19,064 25
	Spruce laths .....		1,177 50	2,680 00	3,857 50
	Spruce boards .....			925 00	925 00
	Spilling .....		8,337 50	2,674 50	6,012 00
	Stone blocks .....		3,374 00	5,372 00	8,746 00
	Tanbark .....	1,296 00	1,271 50	13,398 50	15,965 00
	Miscellaneous .....		528 38		528 38
	Total .....	7,251 92	77,655 80	76,531 05	163,438 77
Newcastle .....	Blueberries .....	20 00			20 00
	Boards pine and spruce .....		15 08	4,253 28	4,268 36
	Eels, fresh .....	17 40			17 40
	Flounders, fresh .....	14 00			14 00
	Grindstones .....			2,399 00	2,399 00
	Hemlock bark extract .....	102 02			102 02
	Horses .....	100 00		1,053 00	1,153 00
	Household goods and personal effects .....	1,300 00			1,300 00
	Laths .....		424 96	2,369 15	2,794 11
	Lobsters, fresh .....	60 75			60 75
	Lobsters, in cases .....		1,650 00	7,605 00	9,255 00
	Mackerel, fresh .....	878 35			878 35
	Potatoes .....	126 00			126 00
	Salmon, fresh .....	383 40			383 40
	Shad, fresh .....	175 00			175 00
	Shingles .....		8 00	414 25	422 25
	Smelt, fresh .....	7,913 04			7,913 04
	Tomcods, fresh .....	149 34			149 34
	Trout, fresh .....	57 50			57 50
	Total .....	11,296 80	2,098 04	18,093 68	31,488 52
St. Andrews .....	Eggs .....	23 20			23 20
	Furniture .....		200 00		200 00
	Herring, frozen .....	546 82			546 82
	Herring, smoked .....	26 10			26 10
	Hides, green .....	181 20	129 50	162 20	472 90
	Hoops, ash .....	24 00			24 00
	Mares for breeding .....	125 00	267 50		392 50
	Potatoes .....	8,789 14	884 00		4,673 14
	Turnips .....	3,691 90	367 00	44 50	4,003 40
	Wood .....	24 00	617 80	499 50	1,141 30
	Total .....	8,831 36	2,465 80	706 20	11,503 36

Exports declared for the United States, &amp;c.—Continued.

## NEW BRUNSWICK—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
St. George	Boards and planks, spruce		\$175 00		\$175 00
	Cedar posts		48 00		48 00
	Cedar sleepers		597 40	\$1,405 00	2,002 40
	Granite	\$48 00	1,800 50	487 00	2,335 50
	Hides	155 00			155 00
	Horses		180 00	200 00	380 00
	Hoop-poles	8 00			8 00
	Laths		395 20		395 20
	Wood	485 00	1,134 00	940 50	2,506 50
	Total	646 00	4,327 10	3,032 50	8,005 60
St. John	Firewood		9,272 50	14,233 50	23,506 00
	Fish	4,664 77	11,154 10	14,918 40	30,737 27
	Fruit, dried	1,960 92			1,960 92
	Granite and stone	912 00		2,343 50	3,255 50
	Hides	2,100 00	1,200 00	1,901 25	5,201 25
	Horses	7,966 00	22,782 50	8,974 00	39,722 50
	Lamb, dressed			4,353 67	4,353 67
	Lime	1,195 20	6,268 20	9,573 53	17,036 95
	Lumber	14,579 51	54,219 93	57,178 67	125,978 11
	Machinery			1,105 00	1,105 00
	Potatoes	1,170 00			1,170 00
	Salt		1,662 50	2,815 23	4,477 73
	Stone		1,253 48		1,253 48
	Tea		357 00	992 10	1,349 10
	Timber		6,004 33	3,069 50	9,073 83
	Wines and spirits			2,916 16	2,916 16
	Miscellaneous	13,586 58	4,366 13	2,716 04	10,668 75
	Total	38,134 98	118,540 67	127,090 57	283,766 22
	American lumber				464,638 28
St. Stephen	Barrels		232 00		232 00
	Boards		2,712 00		2,712 00
	Calf skins	21 60			21 60
	Cedar posts	64 00	90 00		154 00
	Codfish	118 75		183 00	301 75
	Corn		750 00		750 00
	Cotton waste	1,180 00	3,904 75	2,400 00	7,484 75
	Farming implements	1,609 00			1,609 00
	Fish, pickled	10 10			10 10
	Granite			187 25	187 25
	Herrings	41 20	69 60		110 80
	Hides	393 30		1,331 50	1,724 80
	Horses	10,725 00	4,205 00	3,037 85	17,967 85
	Household goods	300 00		240 00	540 00
	Lamb, dressed			600 00	600 00
	Laths		216 00		216 00
	Logs		4,000 00		4,000 00
	Lumber			3,630 00	3,630 00
	Molasses	114 18	4,495 00	4,758 97	9,368 15
	Potatoes	186 75	400 00		586 75
	Railroad ties and sleepers	375 00	149 00		524 00
	Salt	1 00		194 50	195 50
	Shingles		1,462 50		1,462 50
	Ship-knees		200 00		200 00
	Skins and furs	885 00		575 25	1,460 25
	Tea			750 00	750 00
	Turnips	498 00	270 00		768 00
	Wood	500 00		130 00	630 00
	Miscellaneous		76 22	453 04	529 26
	Total	17,022 88	23,232 07	18,471 36	58,726 31

## NOVA SCOTIA.

Annapolis	Eggs	\$145 00	\$178 38	\$323 38
	Horses	1,600 00	2,151 00	3,751 00
	Household effects	20 00	150 00	170 00
	Lumber	2,816 00	1,612 47	4,428 47
	Oil barrels (returned)	20 00	40 00	60 00
	Potatoes	575 00	4 00	579 00
	Turnips		13 00	13 00

## DECLARED EXPORTS.

565

*Exports declared for the United States, &c.—Continued.*

## NOVA SCOTIA—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Annapolis—Con- tinued.	Wood		\$830 00	\$2,547 00	\$3,177 00
	All other		752 00	1,284 25	2,036 25
	Total		6,571 00	7,967 10	14,538 10
Barrington	Codfish		246 00	1,515 00	1,761 00
	Lobster, live		16,324 00	2,045 00	18,469 00
	Lobsters, canned		16,765 00	5,625 00	22,390 00
	Lumber		1,022 00		1,022 00
	Mackerel		440 00		440 00
	Total		34,797 00	9,225 00	44,022 00
Bridgewater	Eggs	\$428 57	1,084 53	978 30	2,491 04
	Hemlock railroad ties		1,494 00	729 00	2,193 00
	Lumber		3,249 67	2,833 94	6,123 61
	Total	428 57	5,838 20	4,541 24	10,808 01
Cape Canso	Canned lobsters		14,845 00	6,215 00	21,060 00
	Codfish	158 46		1,436 50	1,594 96
	Pickled mackerel	5,652 00		1,648 00	7,300 00
	Pickled salmon and herring			430 00	430 00
	Total	5,810 46	14,845 00	9,729 50	30,384 96
Cornwallis	Eggs			560 00	560 00
	Horses	400 00	3,697 00	880 00	4,977 00
	Lumber			8,757 00	8,757 00
	Potatoes	18,489 26	26,223 00	1,631 00	46,343 26
	Potatoes, evaporated	34 30			34 30
	Total	18,923 56	29,920 00	11,828 00	60,671 56
Cape Breton (Cow Bay).	Coal		8,417 00		8,417 00
	Culm of coal			1,127 00	1,127 00
	Total		8,417 00	1,127 00	9,544 00
Digby	Finnen haddies	60 00			60 00
	Fish			141 00	141 00
	Hake-sounds	1,454 60		749 90	2,204 50
	Hallout	520 00	80 00	20 00	620 00
	Lobster		1,321 00	2,556 50	3,877 50
	Mackerel		48 00	64 00	112 00
	Wood	112 50	656 25	1,530 75	2,299 50
	Miscellaneous			624 28	624 28
	Total	2,147 10	2,105 25	5,686 43	9,938 78
Glace Bay	Coal		706 50		706 50
	Culm of coal		2,220 50	3,392 50	5,613 00
	Total		2,927 00	3,392 50	6,319 50
Halifax	Ale and porter		182 50		182 50
	Calf-skins	447 24	2,668 35	1,931 50	5,047 09
	Coal		2,515 95		2,515 95
	Cotton cloth	475 51			475 51
	Cotton waste	1,067 21	662 87	1,265 03	2,995 11
	Eggs	479 70		169 43	649 13
	Emigrants effects	992 00	5,082 09	1,718 00	7,792 00
	Empty lager-beer barrels	158 00	443 00	429 00	1,030 00
	Empty milk cases	45 00			45 00
	Empty oil barrels	1,193 70	1,558 68	875 40	3,627 78
	Fish:				
	Dry codfish	58,317 57	55,520 33	52,057 48	165,895 38
	Dry haddock	7,460 21	8,510 43	5,056 75	21,027 39
	Dry hake	8,520 23	2,036 67	3,866 00	10,022 90
	Dry pollock	18 84	39 13		57 97
	Fresh halibut	1,031 69	3,686 09		4,718 38
	Fresh cod	963 42			963 42
	Fresh herring	8,656 31			8,656 31
	Lobsters, canned	3,084 50	22,479 10	45,966 90	71,530 50
	Fresh lobsters, live		2,416 45	1,148 00	3,564 45
	Fresh mackerel			8,753 33	8,753 33
	Fresh salmon		891 64		891 64



Exports declared for the United States, &amp;c.—Continued.

## NOVA SCOTIA—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Halifax—Continued.	Fish:				
	Pickled alewives .....	\$998 40		\$3,276 30	\$4,274 00
	Pickled herring .....	13,862 15	\$181 84	9,128 35	22,672 24
	Pickled mackerel .....	57,055 69	7,257 29	45,988 42	110,301 40
	Pickled salmon .....	4,581 89		17,270 13	21,852 02
	Pickled trout .....	107 83	12 30	222 75	342 88
	Pickled roes, cod .....	28 90			23 90
	Pickled sounds, hake .....	388 86		2,453 94	2,842 30
	Furs, raw .....		1,230 15	700 00	1,930 15
	Glue stock .....		289 50		289 50
	Gold thread .....	66 75	46 23		106 98
	Hair, cattle .....		243 29		243 29
	Hides .....	908 80	2,187 27	2,465 87	5,561 94
	Homespun woollens .....	61 17			61 17
	Horns .....	76 00			76 00
	Horses .....		922 50	695 50	1,618 00
	Laths .....		3,153 25	4,785 00	7,938 25
	Lumber .....	17 88	769 25	733 48	1,520 61
	Molasses .....		2,490 75	177 84	2,668 59
	Mutton and poultry .....	38 70			38 70
	Old bones .....		95 00		95 00
	Old brass .....		54 78		54 78
	Old hoops .....		38 97		38 97
	Old horns .....		102 65		102 65
	Old junk .....	2,634 84	3,215 84	2,559 22	8,409 90
	Old yellow metal .....	262 98	197 80		460 28
	Old zinc .....		96 83		96 83
	Reaper twine .....		3,625 00		3,625 00
	Skates and fixtures .....	145 07			145 07
	Slats .....	2,055 18	466 62	1,778 50	4,295 25
	Vegetables:				
	Carrots and beets .....	2 76			2 76
	Potatoes .....	11,952 88	1,989 97		1,942 85
	Turnips .....	74 48			74 48
	Cranberries .....		331 50	303 13	634 63
	Wood pulp .....		710 00	1,819 00	1,529 00
	Miscellaneous .....	363 00	197 74	3,504 14	4,155 48
	Total .....	183,062 39	139,202 61	221,068 19	543,378 19
Kempt.	Eggs .....		128 40		
	Lump plaster .....		4,010 70		
	Manganese .....		63 00		
	Wood .....		1,188 00		
	Total .....		5,340 10		
Liverpool.	Canned lobster .....		640 00	700 00	1,340 00
	Eggs .....	7 85	202 60	167 72	377 67
	Herring, pickled .....	552 50			552 50
	Horns .....		24 00		24 00
	Laths .....		37 50		37 50
	Leather shavings and cuttings .....		30 00	3 00	33 00
	Lumber:				
	Hemlock .....	817 50	4,371 89	4,504 70	9,694 09
	Spruce .....		200 00		200 00
	Mackerel, pickled .....	870 00		10 00	880 00
	Moose hide .....	7 00			7 00
	Old junk .....		30 00	58 00	88 00
	Old metal .....		28 00	160 55	188 55
	Oil casks .....		18 50	12 50	36 00
	Potatoes .....		11 00		11 00
	Snare .....		13 50		13 50
	Wood pulp .....			2,584 10	2,584 10
	Miscellaneous .....			147 00	147 00
	Total .....	2,254 35	5,601 99	8,847 57	16,503 91
Lunenburg.	Eggs .....		186 20	1,096 22	1,282 42
	Herring, frozen .....	2,500 00			2,500 00
	Mackerel .....	6,107 75		5,817 75	11,425 50
	Paper stock .....			100 00	100 00
	Potatoes .....	1,700 00	41 00		1,741 00
	Spruce poles .....		285 36		285 36
	Total .....	10,307 75	512 56	6,513 97	17,334 28

## DECLARED EXPORTS.

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Exports declared for the United States, &amp;c.—Continued.

## NOVA SCOTIA—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
North Sydney	Canned lobsters		\$540 00	\$500 00	\$1,040 00
	Culm of coal		226 00	1,544 50	1,770 50
	Raw-hides			400 00	400 00
	Total		766 00	2,444 50	3,210 50
Parraboro	Coal			2,678 92	
	Laths			3,744 20	
	Lumber			1,759 12	
	Piling			1,716 04	
	Starchwood			717 50	
	Total			10,610 78	
Pictou	Coal		2,308 61	1,628 08	3,936 69
	Grindstones		1,162 50		1,162 50
	Hair	\$227 39	434 71		662 10
	Horses	977 00	9,668 00	2,687 50	13,332 50
	Household goods and personal effects.	437 50	284 45	568 35	1,290 30
	Lobsters, canned		13,543 00	31,642 50	45,185 50
	Miscellaneous			3,098 50	3,098 50
	Total	1,641 89	27,401 27	39,624 93	68,668 09
Port Hastings	Canned lobsters		750 00	7,650 00	8,400 00
	Eggs		65 00	93 80	158 80
	Fish	146 85	238 00	29,302 00	29,686 85
	Fish, pickled		8,700 00	5,590 00	14,290 00
	Horses	504 00	1,971 00	685 00	2,260 00
	Miscellaneous			346 79	346 79
	Total	650 85	10,824 00	43,667 59	55,141 94
Port Joggins	Coal		9,072 00		
	Cordwood, spruce		326 00		
	Grindstones		1,575 00		
	Spruce boards and scantling		1,858 62		
	Spruce laths		1,684 00		
	Spruce pickets		40 00		
	Piling		15,120 00		
	Total		29,175 62		
Shelburne	Bear dogs		100 00		100 00
	Fish			183 25	183 25
	Eggs		10 00	9 38	19 38
	Hemlock lumber			673 06	673 06
	Lobsters:				
	Canned		1,560 00		1,560 00
	Live		1,075 00	480 00	1,555 00
	Ties, cedar			1,035 60	1,035 60
	Miscellaneous			200 00	200 00
	Total		2,745 00	2,601 29	5,346 29
Sydney and Lingan.	Culm coal		3,494 50	5,682 00	
	Round coal		21,708 50	3,791 00	
	Total		25,203 00	9,473 00	
Walton	Manganese ore	650 00			
Windsor	Bones and junk		53 35		53 35
	Carboys		12 00		12 00
	Cotton waste and bagging		1,242 14		1,242 14
	Horse			86 00	86 00
	Household goods		795 00	215 00	1,010 00
	Manganese		163 00		163 00
	Oil casks, empty		36 20		36 20
	Plaster, ground land		482 50		482 50
	Plaster, lump		26,493 00	26,686 00	63,181 00
	Potatoes	800 00			800 00
	Settlers' effects	550 15			550 15
	Turnips	44 20			44 20
	Total	1,394 35	29,278 19	26,987 00	67,659 54

## DECLARED EXPORTS.

*Exports declared for the United States, &c.—Continued.*

## NOVA SCOTIA—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Wolfville.....	Emigrants' goods.....			\$125 00	\$125 00
	Horse.....	\$78 00			76 00
	Lumber.....			3,564 17	3,564 17
	Potatoes, bushels, 18,178.....	7,115 45			7,115 45
	Miscellaneous.....			62 62	62 62
	Total.....	7,191 45		3,751 79	10,943 24
Yarmouth.....	Eggs.....	733 66	\$2,439 00	1,745 97	4,918 63
	Fish.....				
	Dried and pickled.....	16,531 23	7,829 00	25,740 09	50,100 31
	Fresh.....		22,139 00	4,747 85	26,886 85
	Lobsters, canned.....		5,002 00		5,002 00
	Lumber.....			4,654 50	4,654 50
	Potatoes.....	922 37	930 00		1,852 37
	Rum.....			1,002 50	1,002 50
	Tobacco.....			8,454 75	8,454 75
	Miscellaneous.....	366 50	1,846 00	2,046 89	4,259 39
	Total.....	18,553 76	40,185 00	48,392 54	107,131 30

## ONTARIO.

Amherstburg.....	Ashes.....		\$99 00		\$99 00
	Barley.....	\$1,718 75			1,718 75
	Beans.....		1,491 00		1,491 00
	Bolts.....	4,008 00	5,078 00		9,086 00
	Charcoal.....	475 50	85 00		560 50
	Coriwood.....	778 95	737 00		1,515 95
	Fresh fish.....		304 00		304 00
	Furs, raw.....	81 78	260 58		342 36
	Hides.....	405 50			405 50
	Horse.....		100 00		100 00
	Hoops.....	3,355 47	5,067 45		8,422 92
	Hoop timber.....	53 50			53 50
	Iron, scrap.....	80 00			80 00
	Lambs.....	458 70			458 70
	Logs.....	522 73	6,065 00		6,587 73
	Lumber.....	20,447 09	8,421 93		28,869 02
	Moulding sand.....		876 40		876 40
	Railroad ties.....		12,362 50		12,362 50
	Spokes.....	132 71	1,100 00		1,232 71
	Staves.....	303 12	3,735 51		4,038 63
	Strips.....		170 00		170 00
	Miscellaneous.....		62 00		62 00
	Total.....	32,822 40	45,913 37		78,735 77
Belleville.....	Aconite ore.....		\$225 00	\$360 00	\$585 00
	Arsenic, refined.....	\$1,315 00	1,430 00	1,250 00	3,995 00
	Ashes.....	60,857 65	135 00	2,450 00	63,442 65
	Barley.....		53,057 50	5,173 80	58,231 30
	Bones.....	180 00	720 00	360 00	1,260 00
	Buckwheat.....		202 32		202 32
	Eggs.....		29,957 95	15,633 00	45,590 95
	Fish, fresh.....	1,846 27	1,242 06	173 16	3,261 49
	Horses.....	7,703 50	21,182 50	9,834 00	38,720 00
	Household goods.....	9,205 80	2,954 00	4,424 00	16,583 80
	Lambs.....	360 00			360 00
	Laths.....		1,495 90	698 50	2,194 40
	Lumber.....		126,599 60	175,956 03	302,555 63
	Ore, iron.....	2,295 95			2,295 95
	Peas.....		8,056 25	1,628 00	9,684 25
	Potatoes.....		330 00		330 00
	Pickets.....		209 87	350 25	560 12
	Rye.....		17,302 45	901 50	18,203 95
	Shingles.....		137 50	3,517 70	3,655 20
	Miscellaneous.....	150 50	152 90	9,577 59	9,880 99
	Total.....	83,914 07	265,390 80	232,286 53	581,592 00
Brockville.....	Barley.....	31,354 43	370 80		31,725 23
	Boat and oars.....		80 00		80 00
	Boiler and engine.....		200 00		200 00

## DECLARED EXPORTS.

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Exports declared for the United States, &amp;c.—Continued.

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Brockville—Con- tinued.	Bran .....	\$136 50	\$1,563 50	.....	\$1,700 00
	Buckwheat .....	5,299 81	671 00	.....	5,970 81
	Butter .....	9 18	.....	.....	9 18
	Cattle .....	.....	5,415 00	\$1,380 00	6,795 00
	Calves .....	707 75	.....	104 45	812 20
	Copper wire .....	.....	77 44	.....	77 44
	Eggs .....	.....	28,476 07	23,477 45	51,954 42
	Fence-posts .....	219 10	305 65	.....	524 75
	Furs, raw .....	150 00	1,100 00	480 00	1,730 00
	Hay .....	978 00	2,539 00	200 00	3,717 00
	Hides .....	3,956 00	17,492 72	3,771 00	25,219 72
	Hogs .....	.....	40 00	.....	40 00
	Hooks .....	18,566 00	.....	.....	18,566 00
	Hop-poles .....	4,686 70	138 90	.....	4,825 60
	Horses .....	.....	21,002 50	4,460 00	25,462 50
	Lamba .....	822 00	.....	14,300 82	15,122 82
	Laths .....	290 00	2,010 57	824 88	3,125 45
	Lawn mowers .....	.....	791 77	.....	791 77
	Lumber .....	39,862 72	90,635 05	167,412 06	297,909 83
	Middlings .....	.....	190 00	.....	190 00
	Moccasin .....	243 37	.....	.....	243 37
	Ore:	.....	.....	.....	.....
	Gold .....	50 00	.....	.....	50 00
	Silver .....	3,000 00	.....	.....	3,000 00
	Peas .....	6,340 00	878 75	362 50	7,041 25
	Rye .....	3,355 78	.....	.....	3,355 78
	Settlers' goods .....	2,517 00	1,569 00	1,515 00	5,601 00
	Shingles .....	717 00	1,932 25	1,152 00	3,801 25
	Sweeps, jewelers' .....	.....	90 00	.....	90 00
	Tea:	.....	.....	.....	.....
	Japan .....	.....	405 00	40,534 00	40,939 00
	Dust .....	.....	920 00	.....	920 00
	Telegraph poles .....	56 25	525 00	597 00	1,178 25
	Miscellaneous .....	.....	.....	7,503 82	7,503 82
	<b>Total .....</b>	<b>123,277 09</b>	<b>178,920 87</b>	<b>268,074 98</b>	<b>570,272 94</b>
Chatham .....	Animals .....	.....	12,972 00	21,993 20	34,965 20
	Barley .....	1,526 30	2,537 40	1,155 38	5,219 08
	Beans .....	69,441 88	10,723 89	9,404 05	89,569 82
	Bolts .....	.....	4,711 50	6,725 25	11,436 75
	Bran .....	.....	1,350 50	1,637 02	2,987 52
	Ch. roval .....	1,579 50	1,979 50	.....	3,559 00
	Cordwood .....	731 10	.....	.....	731 10
	Eggs .....	1,306 96	10,561 81	19,066 59	39,935 36
	Hay .....	1,471 00	4,745 63	390 00	6,606 63
	Hides and furs .....	.....	2,556 84	.....	2,556 84
	Hogs .....	.....	7,151 60	.....	7,151 60
	Lumber .....	8,484 81	10,875 76	14,697 29	34,057 86
	Poultry .....	861 30	.....	7,879 00	8,740 30
	Settlers' effects .....	7,650 00	6,705 00	.....	14,355 00
	Ship pl. nk .....	5,220 00	3,269 96	5,459 52	13,949 48
	Staves, hoops, and heading .....	.....	47,844 98	52,963 34	100,810 32
	Staves, bolts, and heading .....	18,332 16	.....	.....	18,332 16
	Stock .....	14,729 50	.....	.....	14,729 50
	Wood .....	.....	2,485 75	10,843 00	12,328 75
	Miscellaneous .....	2,023 00	709 95	11,068 30	12,821 25
	<b>Total .....</b>	<b>128,307 51</b>	<b>139,681 09</b>	<b>161,703 94</b>	<b>429,692 54</b>
Clifton .....	Apples .....	5,568 50	.....	324 00	5,892 50
	Barley .....	15,991 35	2,919 40	.....	18,910 75
	Bones .....	216 00	650 00	212 50	1,078 50
	Cattle .....	273 00	4,500 00	4,100 00	8,873 00
	Dogs .....	500 00	.....	.....	500 00
	Eggs .....	.....	1,521 00	.....	1,521 00
	Flour .....	531 25	2,856 00	.....	3,387 25
	Hay .....	2,492 00	7,673 57	1,146 50	11,312 07
	Horses .....	28,334 50	24,646 20	8,422 50	56,603 20
	Iron, scrap .....	450 00	.....	.....	450 00
	Lumber .....	.....	890 00	2,719 35	3,609 35
	Malt .....	.....	2,090 00	1,842 10	3,932 10
	Manufactured articles .....	183 61	607 96	964 79	1,756 36
	Mill feed .....	6,732 25	16,631 00	16,757 38	40,140 63
	Nursery stock .....	.....	1,586 83	182 09	1,768 92
	Paper, carbonic .....	.....	617 31	.....	617 31
	Poultry .....	100 00	.....	537 92	637 92
	Sheep and lambs .....	1,500 50	.....	1,155 50	2,656 00

Exports declared for the United States, &amp;c.—Continued.

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Clifton—Cont'd.	Silver, scrap		\$759 70		\$759 70
	Tobacco	\$2,575 30	1,547 05		4,122 35
	Wood		300 00		300 00
	Wood pulp	1,500 00	900 00		2,400 00
	Miscellaneous			\$933 05	933 05
	Total	64,898 26	70,837 52	38,747 68	174,483 46
Coaticook	Animals	16,563 00	55,808 00	53,372 00	125,743 00
	Barrels	357 00			357 00
	Barrels returned		159 00		159 00
	Bark	3,180 00	1,984 00	945 00	6,109 00
	Berries	75 00		2,093 00	2,168 00
	Butter	1,031 00			1,031 00
	Carriages		110 00	107 00	217 00
	Clapboards	1,935 00	7,520 00	9,075 00	18,530 00
	Copper		82,089 00	50,384 00	132,473 00
	Copper ore	12,730 00			12,730 00
	Furs	247 00	267 00	423 00	937 00
	Grass seed		75 00		75 00
	Harness		96 00		96 00
	Hay	4,881 00	2,202 00	432 00	7,515 00
	Hides	2,528 00	436 00	1,172 00	4,134 00
	Lambs				565 00
	Lumber	9,122 00	24,995 00	12,767 00	46,884 00
	Machinery	825 00	210 00		535 00
	Oats		26 00		26 00
	Personal effects	3,513 00	9,521 00	4,313 00	17,347 00
	Poultry	375 00			375 00
	Railroad ties	480 00	1,321 00		1,801 00
	Skins		400 00		400 00
	Straw	27 00	25 00		52 00
	Tin, sheet	30 00			30 00
	Water, spring	150 00			150 00
	Wood	205 00		4,710 00	4,915 00
	Wood pulp		200 00		200 00
	Miscellaneous	121 00	120 00	655 00	896 00
	Total	57,873 00	188,129 00	140,448 00	386,450 00
Collingwood	Barley	276 90			276 90
	Barrels, empty	327 70			327 70
	Cattle	480 00	2,620 50	5,123 00	8,223 50
	Circular saw	120 00			120 00
	Fish, fresh	151 25	17,584 58	20,533 64	38,269 47
	Fish, salt		1,467 50	237 15	1,704 65
	Horses	1,931 50	2,763 00	4,345 00	9,039 50
	Lumber	725 59	77,635 98	103,518 86	181,880 43
	Oats	50 00			50 00
	Settlers' effects	1,824 00	1,788 00	3,555 00	7,117 00
	Ship knees	90 00			90 00
	Miscellaneous		496 00	11,407 45	11,903 45
	Total	5,976 94	104,305 56	148,720 10	259,002 60
Cornwall	Animals for breeding	3,960 00	600 00	150 00	4,710 00
	Cattle		289 00	5 00	294 00
	Eggs		6,707 54	2,742 03	9,449 57
	Hay	276 00	2,185 00		2,461 00
	Hemlock bark	376 00			376 00
	Horses	6,191 00	6,692 00	4,391 75	17,274 75
	Hop poles				250 00
	Household and personal effects	1,691 50	1,858 00	2,450 00	6,299 50
	Railroad ties and cedar posts		1,225 50		1,225 50
	Sheep and lambs			1,827 75	1,827 75
	Skins		747 99	85 20	843 19
	Miscellaneous	92 53		60 60	153 13
	Total	12,137 05	20,305 03	11,722 33	45,164 41
	United States manufactures and productions returned	100 00	1,072 00	77 72	1,249 72
Deseronto	Barley	3,299 42			3,299 42
	Bed slats		120 28		120 28
	Blind slats		431 77	262 78	694 55
	Box shooks		23 81		23 81
	Bunch wood		232 80	856 35	1,089 15
	Cedar posts		3,502 00	8,033 73	11,535 73

## DECLARED EXPORTS.

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*Exports declared for the United States, &c.—Continued.*

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Deseronto—Con- tinued.	Cord wood.....		\$1 50		\$1 50
	Dock pins.....		4 00		4 00
	Flour.....		58 75	\$41 42	100 17
	Hay.....	\$193 38	1,846 21		2,039 54
	Heading.....		1,270 65	954 78	2,225 43
	Hop poles.....		72 45		72 45
	Laths.....		1,797 46	3,324 10	5,121 56
	Lumber.....		91,262 31	89,978 33	181,240 64
	Mouldings.....	194 77			194 77
	Moulding strips.....		713 53	1,192 97	1,906 50
	Paving blocks.....		140 00	24 50	164 50
	Pickets.....		6 00	134 25	140 25
	Potatoes.....		1 20		1 20
	Shingles.....	655 99	10,397 11	6,300 42	17,353 52
	Ties.....		8,371 20	12,782 10	21,153 80
	Miscellaneous.....			2,159 14	2,159 14
	Total.....	4,348 51	120,253 03	126,044 87	250,641 41
Fort Erie.....	Ashes.....			1,050 00	1,050 00
	Barley.....	13,071 32	4,399 24		17,470 56
	Bran.....	444 00	329 40	1,508 50	2,281 90
	Breeding animals.....	4,625 00	2,335 00	2,277 00	9,237 00
	Building brick.....		782 60	568 00	1,350 60
	Cattle.....	2,677 00	3,594 00	3,704 00	9,975 00
	Cord-wood.....			635 00	635 00
	Eggs.....		1,293 70	1,950 41	3,244 11
	Furs.....		491 75		491 75
	Gypsum (rock).....		337 00	281 85	618 85
	Gluestock.....		304 21		304 21
	Horses.....	6,777 50	17,035 00	6,413 00	30,225 50
	Hay.....	493 51			493 51
	Lambs.....	2,393 00		1,689 50	4,082 50
	Lumber.....	4,578 16	20,065 91	40,885 04	65,529 11
	Oil barrels.....	163 20		45 00	208 20
	Oil (cod liver).....		517 50	640 40	1,157 90
	Personal effects.....	4,969 00	2,046 00	623 00	7,638 00
	Poultry.....	165 00			165 00
	Sheep.....	802 00			802 00
	Timber.....	375 79	6,183 08	34,766 47	41,325 34
	Wheat.....		17,865 00	13,210 00	31,075 00
	Miscellaneous.....	104 40	713 29	977 45	1,795 14
	Total.....	41,638 88	78,292 68	111,224 62	231,156 18
	Total preceding year.....	30,758 00	80,677 00	74,612 12	186,047 12
	Increase.....	10,880 88		36,612 50	45,109 06
	Decrease.....		2,384 32		
Gananoque.....	Ashes.....	75 00			75 00
	Barley.....	22,806 00	4,561 00		27,367 00
	Eggs.....		3,436 21	2,278 58	5,714 79
	Harrow.....	9 53	135 00		144 50
	Hay.....	2,417 00	895 22		3,312 22
	Horses.....	800 00	875 00	570 00	2,245 00
	Household goods.....	75 00	1,652 00	173 00	1,900 00
	Percheron stallion.....	400 00	400 00		800 00
	Sheep.....			2,346 35	2,346 35
	Skins.....			524 40	524 40
	Total.....	26,582 50	11,974 43	5,892 33	44,449 26
Goderich.....	Animals.....	26,401 00	38,058 00	35,889 00	100,348 00
	Barley.....	38,590 00	14,000 00		52,590 00
	Flax.....		2,000 00		2,000 00
	Household goods.....	9,331 00	5,172 00	3,036 00	17,539 00
	Lumber.....	315 00	467 00		782 00
	Salt.....	1,337 00	10,087 00	4,477 00	15,901 00
	Miscellaneous.....	124 00	94 00	1,495 00	1,713 00
	Total.....	76,098 00	69,878 00	44,897 00	190,873 00
Guelph.....	Animals for breeding.....	11,005 00	5,294 00	7,468 00	23,767 00
	Ashes.....		1,213 37	1,252 18	2,565 55
	Barley.....	89,114 44	15,760 03	2,850 00	107,724 47
	Bran.....	4,251 00	2,632 37	4,310 00	11,193 37

Exports declared for the United States, &amp;c.—Continued.

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Guelph—Cont'd	Buttons, vegetable ivory	\$9,663 28	\$11,502 90	\$4,456 16	\$25,622 34
	Cattle	4,471 48	2,828 00	49,410 15	56,709 63
	Eggs	2,240 00	40,336 50	44,335 50	86,912 00
	Hay	3,570 75	3,487 00		7,057 75
	Horses	27,262 00	12,206 00		39,468 00
	Household goods	12,032 20	5,032 20	7,304 25	25,268 65
	Lambs and sheep	5,115 50		94,480 50	99,596 00
	Lumber	1,819 75		3,369 21	5,188 96
	Machines—sewing, &c.	3,256 62	3,827 66	3,113 89	10,198 17
	Malt	4,302 86	2,646 00	4,984 93	11,933 79
	Organs			2,250 00	2,250 00
	Peas and split peas	13,201 48	13,520 75	5,815 25	32,537 48
	Tow	3,584 00	1,792 00		5,376 00
	Turnips	2,100 32			2,100 32
	Wool		3,913 23		3,913 23
	Miscellaneous	4,385 37	2,610 79	3,154 24	10,150 40
	Total	201,376 05	129,602 80	238,554 26	569,533 11
Grenville	Hides and calf-skins		950 75	142 23	1,092 98
	Lumber, sawed		62,276 73	66,503 90	128,780 63
	Match splints		8,078 27	1,930 89	10,009 16
	Pulp			1,463 20	1,463 20
	Railway ties			7,575 80	7,575 80
	Settler's effects		880 00	895 00	1,775 00
	Shingles			228 65	228 65
	Total		72,185 75	78,739 67	150,925 42
Hamilton	Animals	12,758 50	12,464 00	22,340 45	47,562 95
	Apples	904 00			904 00
	Bailey	27,596 27	3,599 70		31,195 97
	Cotton waste	1,023 00	2,308 21	1,362 09	4,693 30
	Clover seed	10,038 60			10,038 60
	Eggs	420 85	6,461 70	15,946 00	22,828 55
	Household goods	7,978 80	19,373 65	15,921 00	43,273 45
	Hay	185 00	3,099 05		3,284 05
	Lumber	2,604 52	7,511 50	899 05	10,515 07
	Malt	7,642 10	9,715 80	3,295 30	20,653 20
	Peas	451 82	3,181 10		3,632 92
	Railroad ties	1,603 52			1,603 52
	Sewing-machines	502 75		259 50	762 25
	Skins	8,835 19	2,214 60	5,409 28	16,459 07
	Turnips	53 30	54 96		108 26
	Wheat	13,760 00	32,127 06	6,400 00	52,287 06
	Wool	54,228 34	29,352 07	62,271 34	145,851 75
	Miscellaneous	4,499 48	13,819 32	9,934 71	28,254 01
	Total	155,085 74	145,283 22	143,538 72	443,907 68
Kingston	Ashea			375 00	375 00
	Bailey	174,987 12	83,162 98		208,150 10
	Barrels, empty		71 20		71 20
	Buckwheat		1,715 20		1,715 20
	Bones		150 00	60 00	210 00
	Clothing		6 20		6 20
	Eggs		2,822 80	1,879 30	4,202 10
	Furs, raw	18,911 60	19,979 38	3,453 40	37,344 38
	Goods returned			109 25	109 25
	Hair		300 00		300 00
	Hay	12,355 00	7,294 00	2,151 00	21,800 00
	Hides	400 07			400 07
	Horses	4,427 50	10,565 75	1,849 25	16,842 50
	Household goods	3,807 50	7,325 00	3,330 00	14,452 50
	Iron ore			6,309 00	6,309 00
	Junk	235 10		950 00	1,185 10
	Lumber		61,587 00	43,468 09	95,055 09
	Mica	1,050 00	1,050 00	3,805 00	5,905 00
	Oil paintings		120 00		120 00
	Old type		25 00		25 00
	Patent medicine		50 00		50 00
	Peas for seed	675 15	226 50		901 65
	Piano	210 00			210 00
	Propeller wheel	17 00			17 00
	Phosphate		5 00	1,010 00	1,015 00
	Railroad ties			5,106 70	5,106 70
	Rye	6,200 00			6,200 00
	Sheep and lambs	1,361 00		4,886 25	6,247 25

## DECLARED EXPORTS.

573

Exports declared for the United States, &amp;c.—Continued.

ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Kingston—Continued.	Tea	\$2,250 50			\$2,250 50
	Wool			\$367 04	367 04
	Total	221,887 54	\$135,956 01	79,099 28	436,942 83
London	Animals, breeding	61,899 00	21,836 50	8,267 00	92,002 50
	Apples	2,159 00		284 00	2,423 00
	Ashes	1,368 00	1,939 50	827 50	4,135 00
	Barley	56,633 49	7,401 50		64,034 99
	Bones	680 00	1,884 00	900 00	3,464 00
	Car-wheels, old	1,557 37		2,191 97	3,749 34
	Eggs		30,858 10	28,760 90	59,619 00
	Flax and tow	20,543 86	10,066 91		30,610 77
	Hay	5,647 25	4,489 30	441 00	10,577 55
	Hides and skins	16,249 16	5,477 75	16,458 76	38,185 67
	Household effects	24,242 50	19,455 50	13,168 25	56,866 25
	Live stock	69,834 70	88,326 50	36,523 81	144,685 01
	Lumber, wood, and oil	441 17	2,480 00	572 43	3,493 60
	Merchandise	968 98			968 98
	Salt	487 20	112 50		599 70
	Split peas	3,048 17	735 00		3,783 17
	Tobacco (in bond, and returned)	1,140 45		6,093 89	7,234 34
	Wool			4,827 24	4,827 24
	Miscellaneous	5,672 75	8,678 13	4,604 32	18,955 20
	Total	272,603 05	154,241 19	123,901 07	550,745 31
Morrisburg	Barley	5,250 00			5,250 00
	Buckwheat		630 0		630 00
	Eggs		34,842 00	34,417 60	69,259 60
	Cattle	429 00			429 00
	Hay	6,765 03	6,186 60	2,975 00	15,926 63
	Hides	617 65			617 65
	Horses	9,599 50	11,945 00	9,357 00	30,901 50
	Personal effects	1,066 50	65 00	812 00	1,943 50
	Skins		9,715 20	497 00	10,212 20
	Sheep and lambs	898 60		14,725 00	15,623 60
	Miscellaneous	75 00	576 79	668 00	1,319 79
	Total	24,701 27	63,960 59	63,451 60	152,113 46
Napanee	Air brush	50 00			50 00
	Animals for breeding	1,155 00			1,155 00
	Ashes	1,578 00	952 50	2,475 00	5,005 50
	Barley	119,988 35	32,829 85	8,362 80	161,181 00
	Bones		537 00		537 00
	Calves			537 50	537 50
	Eggs		8,680 00	4,506 88	13,186 88
	Fertilizer	63 50	5 00		68 50
	Hay	1,248 00			1,248 00
	Horses	4,375 00		515 00	4,890 00
	Lumber	950 26		60 00	1,010 26
	Machinery	10 00		45 00	55 00
	Peas		5,115 00	8,447 75	8,562 75
	Potaash		20	1 00	1 20
	Rye		8,297 60		8,297 60
	Sheep			1,740 50	1,740 50
	Skins	19 50	160 00		179 50
	Miscellaneous			40 00	40 00
	Total	129,487 61	56,577 24	31,731 43	207,746 28
Orillia	Carriages		85 00		85 00
	Contractor's plant	151 00			151 00
	Furs, raw	159 03	1,041 80		1,200 83
	Live stock	1,865 00			1,865 00
	Lumber		482 47	662 78	1,095 25
	Poles, hop	162 00			162 00
	Settler's effects	825 26	8,462 35	1,126 50	4,914 10
	Telegraph poles			66 00	66 00
	Total	2,192 30	5,021 62	1,855 28	9,069 20
Ottawa	Box shooks		9,452 34	11,506 90	20,959 38
	Buckwheat and barley		1,205 62		1,205 62
	Dimension timber		667 61		667 61
	Doors and moldings		1,517 50	1,438 95	2,956 45
	Eggs		74 97	502 79	577 76



## DECLARED EXPORTS.

Exports declared for the United States, &amp;c.—Continued.

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Ottawa—Cont'd..	Fence posts .....		\$145 33	\$29 10	\$174 43
	Hemlock bark .....		88 00		88 00
	Horses .....		975 00	115 00	1,090 00
	Laths .....		6,403 96	16,699 63	23,103 59
	Lumber, sawed .....		650,711 63	854,330 30	1,505,041 93
	Match blocks and splints .....		400 56	1,787 79	2,188 35
	Pickets .....		7,443 21	6,108 17	13,551 38
	Phosphate for fertilizer .....		1,105 94	1,335 20	2,441 14
	Plasterers' hair .....		260 00		260 00
	Railway ties .....		5,722 60	4,727 32	10,449 92
	Salted skins and furs .....		178 00	345 00	523 00
	Settlers' effects .....		6,494 00	5,172 00	11,666 00
	Shingles .....		855 76		855 76
	Sticks, curtain (as pickets) .....			2,468 97	2,468 97
	Telegraph poles .....		1,837 50	235 00	2,072 50
	Miscellaneous .....		672 06	3,369 60	4,041 66
	Total .....		696,211 59	910,171 81	1,606,383 40
Owen Sound .....	Barley .....	\$1,600 00		1,000 00	2,600 00
	Bones .....		72 00		72 00
	Fish .....	4,800 00	19,803 00	27,800 00	52,403 00
	Horses .....			5,000 00	5,000 00
	Lumber .....	4,600 00	14,100 00	25,300 00	44,000 00
	Poles, railway ties, &c .....	1,500 00	21,850 00	20,100 00	43,450 00
	Scrap-iron .....		320 00		320 00
	Settlers' effects .....	600 00	3,800 00	1,800 00	6,200 00
	Sheep and cattle .....			23,500 00	23,500 00
	Total .....	13,100 00	59,942 00	104,500 00	177,542 00
Paris .....	Animals .....	47,306 65	16,840 00	10,488 90	74,635 55
	Barley .....	56,430 24	7,791 70		64,221 94
	Bran .....		2,100 50		2,100 50
	Eggs .....		4,074 00	3,051 50	7,125 50
	Flax .....		3,780 00		3,780 00
	Goods imported for export .....		5,462 45		5,462 45
	Hides .....	2,437 50			2,437 50
	Household goods .....	6,055 50	6,238 00	8,586 50	20,880 00
	Machinery .....	12,884 00		4,491 75	17,375 75
	Split peas .....	3,275 00			3,275 00
	Turnips .....	2,087 43			2,087 43
	Wool .....			960 96	960 96
	Miscellaneous .....	7,871 10	4,175 65	3,260 15	15,306 90
	Total .....	138,347 42	50,462 30	30,839 76	219,649 48
Picton .....	Animals .....			678 00	678 00
	Apples .....	1,956 00			1,956 00
	Apples .....			1,050 00	1,050 00
	Barley .....	84,001 83	45,400 00		129,401 83
	Basswood bolts .....		1,230 00		1,230 00
	Beans .....	76 68	79 22		155 90
	Buckwheat .....	196 46	277 60	1,591 00	2,065 06
	Buggies .....		230 00		230 00
	Canned fruit .....		20 00		20 00
	Cedar posts .....		320 00		320 00
	Coal oil barrels .....		80 00		80 00
	Cows .....		1,159 50		1,159 50
	Eggs .....		8,883 25	11,722 52	20,605 77
	Fish .....		445 00		445 00
	Hay .....	163 38	4,084 30	320 50	4,568 18
	Holstein cattle .....		3,900 00		3,900 00
	Horses .....	642 50	1,087 50	756 00	2,486 00
	Household goods .....	1,097 00	2,839 00	987 00	4,923 00
	Iron ore .....	48 00		4,550 82	4,598 82
	Lumber .....			1,050 00	1,050 00
	Peas .....	2,293 10	6,823 80	42,346 45	51,463 35
	Poplar wood .....		1,890 00	625 00	2,515 00
	Rye .....		2,626 05	14,858 86	17,484 91
	Straw .....		1,339 00	874 00	2,213 00
	Total .....	40,474 95	82,214 22	81,360 15	204,049 32
Port Arthur .....	Apples .....	5,529 00			5,529 00
	Barley .....	157,823 52			157,823 52
	Barytes ore .....			5,000 00	5,000 00
	Beans .....	2,474 74			2,474 74

## DECLARED EXPORTS.

575

Exports declared for the United States, &amp;c.—Continued.

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Port Arthur— Continued.	Cattle .....			\$100 00	\$100 00
	Eggs .....	\$215 00			215 00
	Emigrants' effects .....	6,096 00		100 00	6,196 00
	Fish:				
	Fresh .....		\$2,494 44	8,340 02	10,834 46
	Smoked .....		24 00		24 00
	Salt .....		116 50	181 95	248 45
	Furs, raw .....		2,771 77	623 64	3,395 41
	Hides .....	19,367 00			19,367 00
	Horses .....	17,031 00			17,031 00
	Lumber .....	6,740 50			6,740 50
	Peas .....	36,073 53			36,073 53
	Silver ore, concentrated .....			5,000 00	5,000 00
	Shingles .....	1,401 18			1,401 18
	Stone, rough, for building .....		1,953 00		1,953 00
	Miscellaneous .....	1,232 46		1,518 74	2,751 20
	Total .....	253,963 93	7,350 71	20,814 35	282,157 99
Port Hope .....	Apples .....	5,529 00			5,529 00
	Barley .....	157,823 52	33,068 35	29,557 49	220,449 36
	Beans .....	2,474 74		372 73	2,847 47
	Cattle .....		2,736 00	4,301 50	7,037 50
	Eggs .....	215 00	20,098 31	27,894 47	48,207 78
	Emigrants' effects .....	6,096 00	14,495 00	6,354 30	26,945 30
	Horses .....	17,031 00	19,074 50	19,190 50	55,296 00
	Hides .....	19,367 00	7,928 00	6,050 00	33,345 00
	Lambs .....			7,744 65	7,744 65
	Lath .....		92 50	114 90	207 40
	Live fowl .....				
	Lumber .....	6,740 20	146,226 65	122,086 66	275,053 51
	Peas .....	36,073 53	12,189 62	7,765 81	56,028 96
	Posts .....		948 15	301 00	1,249 15
	Rye .....		9,730 60		9,730 60
	Shingles .....	1,401 18	4,868 13	6,462 40	12,731 71
	Wool .....			5,517 16	5,517 16
	Miscellaneous .....	1,232 76	3,682 28	1,922 00	6,837 04
	Total .....	253,963 93	275,178 09	245,635 57	774,797 59
Port Rowan .....	Barley .....	50,225 36	7,881 60		58,106 96
	Cattle .....	4,867 00	13,443 05	15,272 70	33,582 75
	Eggs .....	1,266 30	9,083 59	6,660 41	16,960 30
	Horses .....	89,779 00	12,105 00	5,607 00	57,491 00
	Lumber .....	4,318 00	8,448 00	11,814 50	23,480 50
	Sheep and lambs .....	7,496 95	1,784 50	15,651 77	24,933 22
	Split peas .....	5,092 50	1,200 00	6,495 75	13,388 25
	Wheat .....		10,387 50	14,651 50	25,039 00
	Miscellaneous .....	1,250 25	4,109 52	2,065 50	7,425 27
	Total .....	114,795 36	68,872 76	78,219 13	261,387 25
Port Sarnia .....	Animals .....	19,241 00	22,873 50	15,642 50	57,757 00
	Apples .....		338 00	476 00	714 00
	Barley .....	21,842 00	5,843 30	600 00	28,285 30
	Bones .....		200 00		200 00
	Cordwood .....	105 00			105 00
	Eggs .....		185 00	361 90	496 90
	Fish .....		3,185 30	2,238 50	5,373 80
	Flax, or long tow .....	1,756 00			1,756 00
	Fruit trees .....		903 27		903 27
	Furs .....	1,318 00	239 30		1,577 30
	Hay .....		1,227 95		1,227 95
	Household goods and personal ef- fects .....				
	Lumber .....	22,813 00	14,433 50	15,727 00	52,973 50
	Machinery .....		24,190 96	72,553 87	96,714 83
	Middlings .....	416 00	370 00	1,649 25	2,435 25
	Potash .....		120 00		120 00
	Terre plates .....	480 00	1,256 60		1,736 60
	Wheat .....			1,498 50	1,498 50
	Wood and railroad ties .....		17,000 00		17,000 00
	Wool .....		869 00		869 00
	Miscellaneous .....	155 00		2,553 18	2,553 18
	Total .....	68,126 00	93,025 68	113,498 70	274,650 38

Exports declared for the United States, &amp;c.—Continued.

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March.	June 30.	Sept. 30.	
Port Stanley and St. Thomas.	Acids .....	\$225 00	\$60 00	.....	\$285 00
	Apples, dried .....	1, 116 58	.....	.....	1, 116 58
	Apples, green .....	675 50	325 00	.....	1, 000 50
	Ashea, wood .....	.....	545 00	\$360 00	905 00
	Barley .....	28, 236 78	880 25	2, 268 00	30, 885 03
	Beans .....	1, 823 26	.....	.....	1, 823 26
	Bran .....	.....	950 00	950 00	1, 900 00
	Breeding animals .....	8, 883 00	220 00	.....	9, 103 00
	Cattle .....	2, 378 75	4, 616 00	24, 887 35	31, 882 10
	Eggs .....	.....	1, 892 00	9, 223 40	11, 115 40
	Fish .....	.....	734 00	1, 894 00	2, 628 00
	Flour .....	.....	517 50	.....	517 50
	Hay .....	1, 936 40	2, 727 40	695 50	5, 359 30
	Hardware .....	851 63	.....	.....	851 63
	Hides and skins .....	7, 630 00	1, 007 00	.....	8, 637 00
	Horses .....	9, 704 50	8, 023 00	7, 498 00	20, 225 50
	Hoops, headings, and staves .....	25, 408 58	45, 968 71	47, 767 00	119, 144 29
	Lumber .....	9, 000 47	2, 822 04	2, 913 55	14, 736 06
	Oil .....	3, 187 32	1, 428 89	2, 626 32	7, 242 53
	Peas .....	400 00	.....	.....	400 00
	Personal and household effects .....	23, 805 00	11, 273 50	9, 511 00	44, 589 50
	Potatoes and turnips .....	1, 859 00	738 60	.....	2, 597 60
	Scrap-iron, old car-wheels, &c. ....	8, 437 35	.....	.....	8, 437 35
	Sheep and lambs .....	12, 377 35	.....	20, 159 00	32, 536 35
	Telegraph poles .....	.....	1, 060 60	1, 912 35	2, 972 95
	Wheat .....	8, 702 18	31, 621 95	20, 815 54	56, 139 67
	Wool .....	.....	.....	9, 329 98	9, 329 98
	Wood .....	.....	4, 755 50	1, 894 00	6, 649 50
	Miscellaneous .....	1, 149 99	537 15	984 00	2, 671 14
	Total .....	153, 238 59	117, 204 09	165, 688 99	436, 131 67
Prescott .....	Barley .....	5, 598 50	350 00	.....	5, 948 50
	Barrel-stave machine .....	.....	200 00	.....	200 00
	Beans .....	63 40	.....	.....	63 40
	Bones .....	.....	150 00	.....	150 00
	Buckwheat .....	1, 203 18	849 36	541 50	2, 594 04
	Carboys, empty .....	.....	133 50	.....	133 50
	Cattle .....	243 70	37, 820 00	5 00	38, 068 70
	Crude fulminate .....	.....	3, 181 00	3, 360 00	6, 541 00
	Eggs .....	.....	21, 952 57	14, 443 13	36, 395 70
	Elm logs .....	.....	2, 100 00	.....	2, 100 00
	Fence posts .....	270 73	58 15	60 00	388 88
	Furs, skins, hides .....	3, 227 94	8, 845 63	1, 160 09	13, 273 57
	Harness .....	.....	16 00	.....	16 00
	Hay .....	9, 495 39	6, 423 25	529 00	16, 447 64
	Household effects .....	4, 721 75	623 00	11, 250 00	5, 594 75
	Horses .....	15, 586 00	15, 487 50	.....	42, 927 75
	Lumber .....	8, 787 00	383 00	630 79	9, 750 79
	Potatoes .....	4, 483 10	2, 026 00	.....	6, 459 10
	Railroad ties .....	.....	380 00	2, 075 00	2, 435 00
	Scales .....	.....	3 50	.....	3 50
	Sewing-machine .....	30 00	.....	.....	30 00
	Sheep and lambs .....	24 00	.....	5, 740 97	5, 764 97
	Shingles .....	138 00	.....	.....	138 00
	Straw .....	167 50	.....	.....	167 50
	Tea .....	.....	85 00	.....	85 00
	Telegraph poles .....	.....	263 80	.....	263 80
	Trees, shrubs, &c. ....	.....	771 35	.....	771 35
	Miscellaneous .....	.....	73 00	817 00	890 00
	Total .....	53, 940 19	102, 145 61	41, 516 64	197, 602 44
Sault Ste. Marie.	Beef, fresh .....	157 00	.....	.....	157 00
	Cattle .....	100 00	683 00	680 00	1, 463 00
	Fish, fresh .....	.....	8, 871 00	18, 729 00	27, 600 00
	Fur, raw .....	560 00	1, 704 00	.....	2, 264 00
	Horses for breeding .....	.....	1, 080 00	.....	1, 080 00
	Horses for use .....	120 00	610 00	1, 061 00	1, 791 00
	Personal effects .....	973 00	2, 704 00	2, 510 00	6, 187 00
	Toys .....	.....	408 00	.....	408 00
	Miscellaneous .....	.....	.....	290 00	290 00
	Total .....	1, 910 00	16, 060 00	23, 270 00	41, 240 00
Stratford .....	Ashea .....	850 00	1, 9 6 50	720 00	3, 496 50
	Barley .....	42, 399 10	22, 263 72	.....	64, 662 82
	Bones .....	.....	288 00	372 00	660 00

## DECLARED EXPORTS.

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Exports declared for the United States, &amp;c.—Continued.

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Stratford—Continued.	Bran .....	\$756 00	\$1,313 00	\$1,607 50	\$3,676 50
	Cattle .....	5,480 50	3,415 50	44,254 45	53,150 45
	Eggs .....	2,767 10	79,919 20	103,959 74	186,646 04
	Flax .....	58,198 63	24,207 31	23,037 29	105,443 23
	Hay .....	5,516 11	10,316 50	1,865 75	17,698 36
	Horses .....	99,581 50	39,813 00	15,638 00	154,982 50
	Lumber .....	2,540 86	3,145 40	8,869 36	9,555 62
	Oil-cake .....	12,320 00	3,296 00	9,030 00	24,646 00
	Peas .....	528 65	19,528 41	.....	20,056 06
	Personal effects .....	17,481 70	15,139 00	7,072 00	39,692 70
	Sheep and lambs .....	9,095 95	.....	62,374 15	71,470 10
	Tow .....	19,573 60	.....	8,756 84	28,330 44
	Miscellaneous .....	747 30	1,625 80	1,435 96	3,809 06
	Total .....	277,785 00	226,197 34	283,993 04	787,975 38
Toronto .....	Apples .....	11,410 50	.....	.....	11,410 50
	Armor .....	.....	7,072 00	.....	7,072 00
	Barley .....	496,221 17	191,408 11	13,624 72	701,254 00
	Bones and fertilizers .....	6,327 40	7,336 63	2,478 45	16,142 48
	Books .....	1,818 21	9,083 12	2,350 22	13,251 55
	Breeding animals .....	57,328 00	26,147 50	6,400 00	89,875 50
	Cattle .....	.....	.....	15,820 00	15,820 00
	Coffee .....	.....	11,496 18	.....	11,496 18
	Diamonds .....	.....	.....	3,587 59	3,587 59
	Furs, raw .....	9,817 40	20,829 13	8,119 72	38,766 25
	Glue stock .....	2,001 30	.....	.....	2,001 30
	Hides and pelts .....	13,781 50	12,100 70	2,509 00	28,391 20
	Horses .....	48,785 50	40,124 25	10,042 00	98,951 75
	Lumber and shingles .....	22,910 32	126,142 57	232,392 58	381,445 47
	Machinery .....	.....	10,433 71	.....	10,433 71
	Malt .....	14,591 94	7,935 12	2,900 91	25,427 97
	Old rails, scrap metal .....	33,536 86	.....	.....	33,536 86
	Peas .....	11,759 65	10,524 00	14,646 26	36,929 91
	Personal effects .....	36,430 50	50,724 00	34,820 00	121,974 50
	Sheep and lambs .....	.....	.....	5,435 10	5,435 10
	Telegraph poles, ties, &c. .....	.....	28,824 07	59,930 25	88,754 32
	Tweeds, &c. .....	2,022 40	.....	.....	2,022 40
	Wheat and rye .....	36,382 50	38,587 72	5,100 00	80,070 22
	Wool .....	5,088 04	11,302 00	65,264 22	81,654 26
	Miscellaneous .....	10,283 97	22,622 23	39,104 29	72,010 49
	Total .....	826,497 16	632,693 04	524,525 31	1,983,715 51
Wallaceburg .....	Bolts, staves, and heading .....	76 50	44,296 25	20,755 25	65,128 00
	Breeding animals .....	.....	673 60	.....	673 60
	Cord wood .....	50 00	23,554 75	33,959 26	57,564 01
	Elm logs .....	7,848 31	37,922 75	28,701 50	74,472 56
	Elm staves .....	.....	5,590 72	19,237 05	24,827 77
	Eggs .....	.....	17 10	.....	17 10
	Furs .....	.....	334 30	.....	334 30
	Heading .....	.....	586 50	.....	586 50
	Hay .....	.....	1,294 71	.....	1,294 71
	Hoops .....	.....	229 75	286 25	516 00
	Lumber and logs .....	99 00	3,888 09	10,717 87	14,704 96
	Live stock .....	102 50	262 50	2,342 50	2,707 50
	Poultry .....	.....	377 00	271 00	648 00
	Railroad ties .....	.....	1,021 00	628 30	1,649 30
	Round elm .....	.....	529 00	72 00	601 00
	Settlers' effects .....	125 00	254 00	490 50	869 50
	Ship timber .....	.....	8,875 30	4,815 22	13,690 52
	Wheat .....	.....	.....	5,985 40	5,985 40
	Miscellaneous .....	.....	82 85	83 50	166 35
	Total .....	8,301 31	129,650 07	128,295 70	266,247 08
Waukegan .....	Belting .....	.....	9 00	.....	9 00
	Box shooks .....	7,829 92	12,339 50	17,741 00	37,910 42
	Fish, fresh .....	.....	5,189 53	4,910 68	10,100 21
	Lumber .....	10,569 55	60,242 30	103,098 82	173,911 67
	Pulp wood .....	27 00	.....	.....	27 00
	Settlers' effects .....	.....	.....	290 00	290 00
	Total .....	18,426 47	77,781 33	128,040 50	222,248 30
Whitby .....	Barley .....	149,484 02	16,050 00	97,831 88	263,365 90
	Breeding animals .....	34,052 50	5,290 00	9,172 50	48,515 00
	Eggs .....	.....	7,512 08	7,490 17	15,002 25

## DECLARED EXPORTS.

*Exports declared for the United States, &c.—Continued.*

## ONTARIO—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Whitby—Cont'd	Horses .....	\$7,846 25			\$7,846 25
	Lumber and shingles .....	8,004 22	\$3,500 38	\$20,545 60	32,050 20
	Peas .....	4,249 97		1,060 04	5,310 01
	Personal effects .....	3,242 90	3,695 50	2,418 75	9,357 15
	Wheat .....	743 00	6,400 00	11,553 60	18,696 60
	Miscellaneous .....		1,166 26	2,575 84	3,742 10
	Total .....	207,622 86	43,614 22	152,648 38	403,885 46
Windsor .....	Animals .....	13,420 00	34,981 50	1,550 00	54,951 50
	Apples .....		368 30		368 30
	Barley .....	332 50			332 50
	Beans .....	11,807 00	1,725 00	4,486 65	18,018 65
	Bolts .....	5,258 25	4,324 00	4,728 25	14,310 50
	Charcoal .....	9,900 00	5,940 00	7,440 00	23,280 00
	Eggs .....	701 00	9,824 15	7,276 40	17,801 55
	Fish .....	9,248 14	8,810 95	21,069 50	39,127 59
	Hay .....		449 10		449 10
	Hides and skins .....	5,914 18	6,496 00	1,426 00	13,836 18
	Horses .....	13,826 00	16,349 00	12,016 00	42,191 00
	Logs .....	6,906 76	14,777 00	17,535 25	39,219 01
	Lumber .....	1,974 95	2,953 25	19,278 70	24,206 90
	Malt .....	6,750 00	17,250 00	18,248 60	42,248 60
	Personal effects .....	5,549 00	8,481 50	3,868 00	17,898 50
	Posts, cedar .....		3,532 00	3,095 95	6,627 95
	Poultry .....	65 00	301 60		366 60
	Telegraph poles .....			2,070 00	2,070 00
	Railroad ties .....			4,504 00	4,504 00
	Whisky .....	1,391 00	1,392 50	924 00	3,707 50
	Wood .....	11,997 69	9,108 25	8,007 50	29,113 44
	Miscellaneous .....	4,338 31	2,064 05	3,580 65	9,983 01
	Total .....	114,379 78	149,128 15	141,105 45	404,612 38

## PRINCE EDWARD ISLAND. •

Prince Edward Island.	Eggs .....		\$12,915 00	\$23,343 75	\$36,258 75
	Hake .....		380 00		380 00
	Horses .....		21,025 00	18,751 00	39,776 00
	Lobsters .....		8,272 00	20,903 45	24,175 45
	Mackerel .....			79,881 55	79,881 55
	Potatoes .....		27,171 00	674 20	27,845 20
	Sheep .....			5,195 00	5,195 00
	Wool .....			2,341 70	2,341 70
	Miscellaneous .....		180 00	1,850 92	2,030 92
	Total .....		64,943 00	152,941 57	217,884 57

## QUEBEC.

Farnham .....	Bark .....	\$162 00	\$432 00		\$594 00
	Barley .....	258 50			258 50
	Bones .....		80 00	\$310 00	390 00
	Car wheels, old .....	200 18	193 00	419 88	813 06
	Eggs .....	7 44			7 44
	Hay .....	7,450 50	15,884 00	12,110 25	35,444 75
	Hides .....	222 28	2,863 61	260 56	3,348 44
	Horses and cattle .....	2,700 00	7,515 00	690 00	10,905 00
	Iron castings .....	98 82			98 82
	Lumber .....		17,998 61	17,575 59	35,574 20
	Oats .....		210 00		210 00
	Personal effects .....	309 00	800 00	610 00	1,719 00
	Potatoes .....	4,016 16	273 00		4,289 16
	Sheep .....			3,294 09	3,294 09
	Total .....	15,424 88	46,309 22	35,270 36	97,004 46
Gaspé Basin .....	Cod sounds .....			42 00	42 00
	Laths .....			2 00	2 00
	Lumber .....			440 00	440 00

## DECLARED EXPORTS.

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Exports declared for the United States, &amp;c.—Continued.

QUEBEC—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Gaspé Basin— Continued.	Pallings.....			\$32 00	\$32 00
	Posts, cedar.....		\$1,069 00	170 00	1,239 00
	Potatoes.....			25 00	25 00
	Railway ties.....		\$6,987 00	27,012 00	33,949 00
	Shingles.....			235 00	235 00
	Total.....		\$8,006 00	27,958 00	35,964 00
Georgeville.....	Saw logs.....				7,710 00
	Hemlock bark.....				100 00
	Horses.....				175 00
	Household goods.....				75 00
	Wood.....				100 00
	Total.....				8,150 00
Hemmingford.....	Calves.....	\$8 00		1,405 75	1,413 75
	Cattle.....		465 00	651 80	1,116 80
	Eggs.....	87 78	1,057 14	278 20	1,423 12
	Hay.....	550 00	120 00		670 00
	Hides.....		44 10		44 10
	Horses.....	14,050 00	17,055 50	5,378 00	36,483 50
	Personal effects.....	253 00	1,284 50	895 00	2,432 50
	Potatoes.....	2,309 58	654 40		2,963 98
	Pulp wood.....	562 50			562 50
	Sheep and lambs.....	214 00		6,287 70	6,481 70
	Straw.....	134 00	22 00	160 00	316 00
	Miscellaneous.....			389 50	389 50
	Total.....	18,168 86	20,702 64	15,425 95	54,297 45
Hinchinbrook.....	Cattle.....		60 00	1,463 00	1,523 00
	Eggs.....	408 00	1,616 00	1,957 00	3,981 00
	Hemlock bark.....	400 00	1,899 00	400 00	2,699 00
	Hides.....	320 00			320 00
	Hop poles.....	150 00			150 00
	Horses for general use.....	6,202 00	8,816 00	6,490 50	20,948 50
	Horses for breeding.....	1,217 00	2,197 00	871 00	4,285 00
	Personal effects.....	210 00	600 00	650 00	1,460 00
	Sheep.....			11 00	11 00
	Total.....	8,907 00	14,688 00	11,782 50	35,377 50
Hochelaga and Longueuil.	Ashes.....	70 00		220 00	290 00
	Bark.....			260 00	260 00
	Barrels, empty.....	2,262 28	1,694 03	828 20	4,784 51
	Bones.....	837 50		2,692 00	2,929 50
	Glue stock.....	68 34		1,795 00	1,863 34
	Hair.....	89 75			442 25
	Hay.....	34,273 56	9,530 43	5,316 61	49,120 60
	Horses.....	85 00			85 00
	Household goods.....	100 00	65 00	389 25	554 25
	Lumber.....	732 59		178 80	911 39
	Peas.....			357 50	357 50
	Potatoes.....	432 00	353 70		785 70
	Straw.....		182 79		182 79
	Total.....	38,401 02	12,498 45	11,937 86	62,836 83
Huntingdon.....	Barley.....	4,656 56		240 00	4,896 56
	Cattle.....	465 00			465 00
	Calf-skins.....		400 40		400 40
	Cheese hoops.....		895 67	806 20	1,701 87
	Hay.....	11,854 00	2,625 50	444 00	14,923 50
	Hides, raw, and calf-skins.....	745 08		558 00	1,303 08
	Hogs.....	12 00			12 00
	Horses.....	11,563 50	15,501 00	6,588 00	33,652 50
	Hop poles.....	189 00			189 00
	Household goods.....	690 00		1,500 00	2,190 00
	Lumber.....		154 16	133 80	287 96
	Organ.....	65 00			65 00
	Personal effects.....	70 00	930 00		1,000 00
	Sheep and lambs.....			460 80	460 80
	Straw.....		92 00	100 00	192 00
	Total.....	30,830 14	20,598 73	10,130 80	61,559 67

\* For six months ending June 30.

## DECLARED EXPORTS.

Exports declared for the United States, &amp;c.—Continued.

## QUEBEC—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Coteau Landing.	Bark .....	\$4,220 00	\$2,405 00	\$1,560 00	\$8,185 00
	Barley .....	22,611 27	1,965 00		24,576 27
	Eggs .....		14,458 82	12,888 48	27,347 30
	Hay .....	541 50			541 50
	Hides .....	944 80	1,441 00	436 60	2,822 40
	Hop poles .....	165 00	512 00		677 00
	Horses .....	2,101 00	3,720 05	160 00	5,981 05
	Household and personal effects .....		652 00	234 50	886 50
	Lumber .....	4,404 63	3,421 92	12,345 42	20,171 97
	Potatoes .....	480 00	99 90		579 90
	Sheep .....			1,869 55	1,869 55
	Ties .....	12,168 32	14,196 99	6,387 46	31,752 77
	Total .....	47,636 52	42,872 68	34,883 01	125,391 21
Lecolle .....	Cattle .....	199 00	47 00		246 00
	Eggs .....		2,000 00		2,000 00
	Fish, fresh .....		384 00		384 00
	Grain .....	1,040 15	356 00		1,396 15
	Hay .....	13,954 00	9,145 00		23,099 00
	Horses .....	3,904 25	9,112 00		13,016 25
	Lumber .....	251 00			251 00
	Personal effects .....	221 00	1,027 00		1,248 00
	Piano .....		125 00		125 00
	Straw .....	1,185 00			1,185 00
	Wagon .....		50 00		50 00
	Wood .....	1,059 00			1,059 00
	Miscellaneous .....	238 00	357 00		595 00
	Total .....	22,051 40	22,603 00		44,654 40
Montreal .....	Ale, beer, and porter .....		105 70	582 94	688 64
	Asbestos .....	750 00			750 00
	Ashes:				
	Bone .....		2,934 40	4,232 94	7,167 34
	Pearl .....	177 70	208 03		385 73
	Pot. ....	718 65	864 38	603 40	2,186 41
	Wood .....	866 00	241 00		1,107 00
	Bags .....	42 30	70 00		112 30
	Barley .....	4,155 31			4,155 31
	Bones .....		240 00	2,276 24	2,516 24
	Books .....	146 19	60 00	1,041 59	1,247 78
	Brandy .....	617 32	2,012 21	2,065 53	4,695 06
	Buckwheat .....		711 70		711 70
	Calf skins, G. S. ....	3,591 00			3,591 00
	Canada balsam .....	92 93		90 00	182 93
	Cattle for breeding .....		600 00	315 75	915 75
	Cattle hair .....	649 09	110 60	57 00	816 69
	Champagne .....	18 00	746 46	1,191 01	1,955 47
	Church regalia .....	250 33	883 00	63 10	1,196 43
	Cigars .....		695 60		695 60
	Coffee .....	425 00	6,894 84	12,921 01	20,240 85
	Cotton waste .....		8,984 64	10,585 79	19,570 43
	Diamonds .....		22,675 78		22,675 78
	Drugs .....	300 00	600 00	612 50	1,512 50
	Dyes .....		174 00		174 00
	Eels .....	90 00			90 00
	Fish:				
	Fresh .....	160 00	736 00		896 00
	Salt .....	6,291 60	600 00	6,990 25	13,881 85
	Salmon .....	1,965 00		629 00	2,594 00
	Furs:				
	Manufactured .....	165 00		62 50	227 50
	Raw .....	21,703 14	14,650 92	11,504 88	47,858 94
	Waste .....	359 21		114 80	474 01
	Gin .....	907 82	2,690 12	44 80	3,642 74
	Glass, stained .....		967 00		967 00
	Glue stock .....	800 00	482 75	325 00	1,607 75
	Granite .....	21 43		50 00	71 43
	Hay .....		384 00		384 00
	Horses for use .....	115,147 75	190,735 25	57,348 00	363,231 00
	Horses for breeding .....	9,406 75	10,063 00	5,776 50	25,246 25
	Iron:				
	Casting .....	10 12			10 12
	Filing .....	88 82	224 06	33 38	346 26
	Scrap .....			898 25	898 25
	Jeweler's sweeps .....	820 00	655 00	854 00	2,329 00
	Leather, scrap .....	217 76	287 36	37 58	542 70

## DECLARED EXPORTS.

581

Exports declared for the United States, &amp;c.—Continued.

## QUEBEC—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Montreal—Cont'd	Liquors .....	\$2,760 50	\$11,962 82	\$2,150 90	\$16,874 22
	Lumber .....	1,820 87	16,319 48	31,675 53	49,815 89
	Machinery .....	623 00	275 00	416 00	1,314 00
	Medicine, patent .....	1,100 00	380 00	190 00	1,670 00
	Oats .....	5,718 30			5,718 30
	Oils, cod liver and other .....	120 31	36 10	210 69	367 10
	Paper stock .....	9,714 89	1,149 53	1,481 73	12,346 15
	Personal effects .....	12,410 00	27,828 75	30,517 50	70,756 25
	Potatoes .....	160 00	80 00		240 00
	Poultry .....	6,282 91	96 24		6,379 15
	Rubber, old .....	352 60	1,031 52	1,197 61	2,581 73
	Salt .....		969 00	375 00	1,344 00
	Silk waste .....		35 04	501 50	536 54
	Skins, raw .....		158 87		158 87
	Sleigh .....	855 00			855 00
	Stationery .....	65 00			65 00
	Statuary .....	353 68	318 55	442 50	1,114 73
	Steel, scrap .....		596 08		596 08
	Tails, cattle .....	88 90			88 90
	Tea .....		3,405 51	2,521 84	5,927 35
	Tobacco .....	65,879 72	34,529 52	73,409 00	173,818 24
	Tobacco cuttings .....	130 92	800 28	1,682 91	2,624 11
	Wines .....	1,249 30	2,370 65	1,753 65	5,373 60
	Wire .....		600 00		600 00
	Miscellaneous .....	16,466 03	21,681 89	15,390 00	53,536 92
	Total .....	295,600 15	396,872 62	285,234 10	977,706 87
Point Lévi.....	Animals .....	7,787 50	6,475 00	24,997 75	39,240 25
	Bark .....	4,388 00			4,388 00
	Fish and provisions .....	1,647 25	3,584 19	331 95	5,578 39
	Furs .....		2,437 88		2,437 88
	Household goods .....	1,196 00	2,960 00	5,256 00	9,412 00
	Lumber .....	26,255 83	31,887 05	41,620 94	99,663 82
	Railway ties .....	859 03			859 06
	Miscellaneous .....	526 40	801 48	833 45	2,161 33
	Total .....	42,620 04	48,155 60	72,940 09	163,715 73
Quebec .....	Fish and provisions .....	542 13	2,733 78	1,924 17	5,200 08
	Furs and hides .....	161 00	3,041 00	2,001 75	5,203 75
	Glue stock .....	1,549 93	1,117 91	594 41	3,262 25
	Goods returned .....	1,985 13	437 50	1,040 89	3,463 52
	Hair .....	8,535 11	1,525 00	3,017 40	8,077 51
	Household goods .....	2,098 00	3,267 00	723 00	6,087 00
	Lumber .....	972 73	10,643 77	29,717 01	41,333 51
	Maple sugar .....		13,742 50		13,742 50
	Paper stock .....	2,154 76	1,712 75	4,982 33	8,849 84
	Miscellaneous .....	3,381 72	1,650 82	1,969 03	7,201 07
	Total .....	16,380 51	26,129 03	59,711 49	102,421 03
St. Hyacinthe....	Animals for breeding .....		1,633 00	1,522 50	3,155 50
	Bark .....	6,100 00	12,840 00	11,340 00	30,280 00
	Barley .....	562 50			562 50
	Beans .....	423 15			423 15
	Cattle .....		537 00		537 00
	Eggs .....	11,470 00			11,470 00
	Goods returned .....		30 00		30 00
	Hay .....	8,996 50	23,241 50	16,886 00	49,104 00
	Hides, hair, leather .....	284 00		755 08	1,039 08
	Horses .....	7,727 00	21,434 00	4,507 00	33,668 00
	Lambs and sheep .....		613 80	2,854 25	3,468 15
	Lumber .....	4,183 81	5,677 23	15,240 16	25,100 70
	Oats .....	485 96	253 00		738 96
	Peas .....	254 60	218 40		473 00
	Personal effects .....	1,152 50	676 00	1,490 00	3,308 50
	Potatoes .....	5,656 55	925 75		6,582 30
	Poultry .....	1,620 18			1,620 18
	Shingles .....			238 00	238 00
	Straw .....	562 50	1,368 00	997 00	2,927 50
	Miscellaneous .....	118 16		100 00	218 16
	Total .....	49,591 91	69,447 78	55,899 99	174,939 68
St. John's.....	Asbestos .....		240 00		240 00
	Cattle .....		1,240 00		1,240 00
	Eggs .....	1,127 48	1,078 00	1,264 65	3,470 13



## DECLARED EXPORTS.

Exports declared for the United States, &amp;c.—Continued.

## QUEBEC—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
St. John's—Con- tinued.	Fish.....		\$812 00	\$920 00	\$1,732 00
	Hay.....	\$13,280 74	9,583 84	7,728 91	30,593 49
	Hay-press.....	250 00			250 00
	Hides.....	87 83	272 02	176 00	535 85
	Horses.....	26,177 50	27,909 70	4,187 50	58,274 70
	Oats.....	96 60			96 60
	Peas.....	976 38	781 64	1,899 92	3,657 94
	Personal effects.....	1,173 70	4,425 80	1,057 50	6,657 00
	Potatoes.....	2,177 54	114 92		2,292 46
	Sheep.....			1,796 00	1,796 00
	Straw.....	50 00	540 60	485 00	1,075 60
	Wagon and harness.....			115 00	115 00
	Total.....	45,397 27	46,998 52	19,630 48	112,026 27
Sherbrooke .....	Agricultural implements.....		565 00		565 00
	Asbestos.....	16,620 00	26,122 00	43,580 00	86,322 00
	Bark, hemlock.....	8,711 00	13,085 00	10,482 00	32,278 00
	Butter.....	129 00			129 00
	Cattle.....	556 00	3,900 00	4,178 00	8,634 00
	Coal, bituminous.....	681 00	3,416 00	7,603 00	11,700 00
	Copper, fine.....	71,081 00			71,081 00
	Eggs.....		1,035 00	1,007 00	2,042 00
	Hay.....	1,537 00	2,390 00	824 00	4,751 00
	Hides.....	3,751 00	2,375 00	6,892 00	13,018 00
	Horses for breeding.....	745 00	1,268 00	680 00	2,693 00
	Horses for use.....	2,743 00	9,501 00	2,045 00	14,289 00
	Clapboards, cedar.....		9,768 00	6,832 00	16,600 00
	Clapboards, spruce.....	3,037 00			3,037 00
	Lambs.....			33,341 00	33,341 00
	Laths, spruce.....	1,149 00	1,690 00	2,290 00	5,099 00
	Lime.....	1,703 00	5,674 00	4,865 00	12,242 00
	Logs, birch.....	2,533 00	1,908 00	175 00	4,616 00
	Logs, spruce.....	648 00			648 00
	Lumber, pine.....	281 00	3,075 00		3,356 00
	Lumber, spruce.....	38,496 00	32,736 00	70,325 00	141,557 00
	Lumber, other.....	963 00	1,294 00	1,259 00	3,516 00
	Poplar wood.....	25 00			25 00
	Posts, cedar.....	135 00			135 00
	Potatoes.....	129 00			129 00
	Railroad ties, cedar.....	11,722 00	18,541 00	1,403 00	29,666 00
	Shingles, cedar.....	1,142 00	3,823 00	2,129 00	7,094 00
	Ship knees, tamarac.....	163 00			163 00
	Ship spars.....	90 00			90 00
	Ship timber.....		617 00		617 00
	Settlers effects.....	2,709 00	4,170 00	4,685 00	11,564 00
	Slate.....	34 00	154 00	263 00	451 00
	Steel rails.....			28,439 00	28,439 00
	Telegraph poles, cedar.....	47 00	2,523 00	1,591 00	4,161 00
	Wood pulp, ground.....	7,046 00	4,109 00	2,815 00	13,970 00
	Wood pulp, chemical.....	18,770 00	13,585 00	12,191 00	44,546 00
	Wool.....			2,752 00	2,752 00
	Miscellaneous.....	861 00	1,783 00	1,107 00	3,751 00
	Total.....	198,237 00	164,527 00	251,553 00	614,317 00
Sorel .....	Bark.....	4,302 00			4,302 00
	Hay.....	18,607 33			18,607 33
	Horses.....	1,380 00			1,380 00
	Household goods.....	260 00			260 00
	Potatoes.....	3,953 00			3,953 00
	Straw.....	964 00			964 00
	Total.....	29,466 33			29,466 33
Stanbridge .....	Bark.....	3,771 50	815 00	1,008 00	5,594 50
	Barrels, returned.....	72 50	57 00		129 50
	Beans.....	405 80	127 00	246 25	779 05
	Bees.....	6 00			6 00
	Bee-hives.....		14 00		14 00
	Butter.....	1,008 95			1,008 95
	Cattle.....	2,087 00	2,972 50	9,302 00	14,361 50
	Coal.....		266 00		266 00
	Flax, unbacked.....	20 50		88 03	108 53
	Harness.....	90 00	20 00		110 00
	Hay.....	23,993 00	29,370 25	22,731 00	76,094 25
	Hides.....	3,942 06	7,672 05	3,551 46	15,165 57
	Horses for use.....	14,215 50	28,052 00	12,437 00	54,704 50

## DECLARED EXPORTS.

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Exports declared for the United States, &amp;c.—Continued.

## QUEBEC—Continued.

Whence exported.	Articles.	Quarter ending—			Total.
		March 31.	June 30.	Sept. 30.	
Stanbridge—Con- tinued.	Horses for breeding	\$2,252 50	\$2,425 00	\$1,552 00	\$6,229 50
	Household goods	2,578 80	4,586 00	2,917 90	11,082 70
	Laths		23 00		23 00
	Logs, round	1,808 01	1,168 12	371 18	2,847 31
	Lumber, basswood		36 00		36 00
	Lumber, hardwood		130 00		130 00
	Lumber, hemlock		183 60	477 25	660 85
	Lumber, pine		13 00		13 00
	Lumber, spruce	189 32	691 30	560 00	1,440 62
	Maple sugar		67 80		67 80
	Maple sirup		3 60		3 60
	Oats	10 00		115 00	125 00
	Oxen	585 00			585 00
	Peas	63 80			63 80
	Potatoes	330 25	185 25		515 50
	Printed matter		67 49		67 49
	Scantling		3 32		3 32
	Sheep and lambs	541 00	2,129 55	29,041 42	31,711 97
	Shingles		11 75	27 75	39 50
	Sleighs	75 00			75 00
	Steel bars, returned		419 52		419 52
	Stone		525 00	330 00	855 00
	Straw	1,016 25	366 56	212 00	1,594 81
	Swine	10 00	45 00		55 00
	Sugar	11 92			11 92
	Ties, railroad	20 00	102 50	201 00	323 50
	Tin	67 10			67 10
	Tools	25 00			25 00
	Wheat	3 50			3 50
	Wagons		147 25	15 00	162 25
	Wood	2,822 00	2,447 00	1,680 00	7,429 00
	Miscellaneous	20 00		554 00	574 00
	Total	63,037 06	85,253 41	87,298 24	235,588 71
Three Rivers	Butter	77 50			77 50
	Cedar posts	29 46			29 46
	Eggs			719 81	719 81
	Extract hemlock bark	4,905 24			4,905 24
	Furs		1,361 61		1,361 61
	Hay	62,104 27	37,263 36	24,820 12	124,187 75
	Hemlock bark	3,480 00	8,760 00	11,530 00	23,770 00
	Hides	29 00		1,838 25	1,867 25
	Horses	885 00	827 00		1,712 00
	Household and personal effects	125 00		1,770 00	1,895 00
	Lumber	1,704 91	27,172 40	61,536 28	90,413 59
	Potatoes	302 00	232 50		534 50
	Pulp wood	464 00		2,018 12	2,482 12
	Railroad ties	2,253 78	4,201 80	1,868 40	8,323 98
	Sewing-machines	35 00			35 00
	Shingles	5,852 01	7,462 63	6,194 29	19,508 93
	Telegraph poles			1,196 50	1,196 50
		226 58	1,549 18	2,160 97	3,936 73
	Total	82,473 75	88,830 48	115,647 74	286,951 97
Waterloo	Animals for breeding			1,077 00	1,077 00
	Ashes	186 03	91 00		277 03
	Bark	3,409 75	1,407 00	3,780 00	8,596 75
	Butter	251 50			251 50
	Cattle			182 50	182 50
	Clapboards		236 16		236 16
	Hay	1,508 75	896 00	4,372 00	6,776 75
	Hides	173 81	646 85	60 00	880 66
	Horses	750 00	2,555 00	490 00	3,795 00
	Household goods	240 00	1,201 50	540 00	1,981 50
	Lambs			1,467 50	1,467 50
	Logs		379 60		379 60
	Lumber	5,170 15	12,657 56	14,092 48	31,950 19
	Oats	25 60			25 60
	Potatoes	226 75			226 75
	Shingles		165 00		165 00
	Wood pulp			200 00	200 00
	Total	11,942 34	19,765 67	26,231 48	57,939 49



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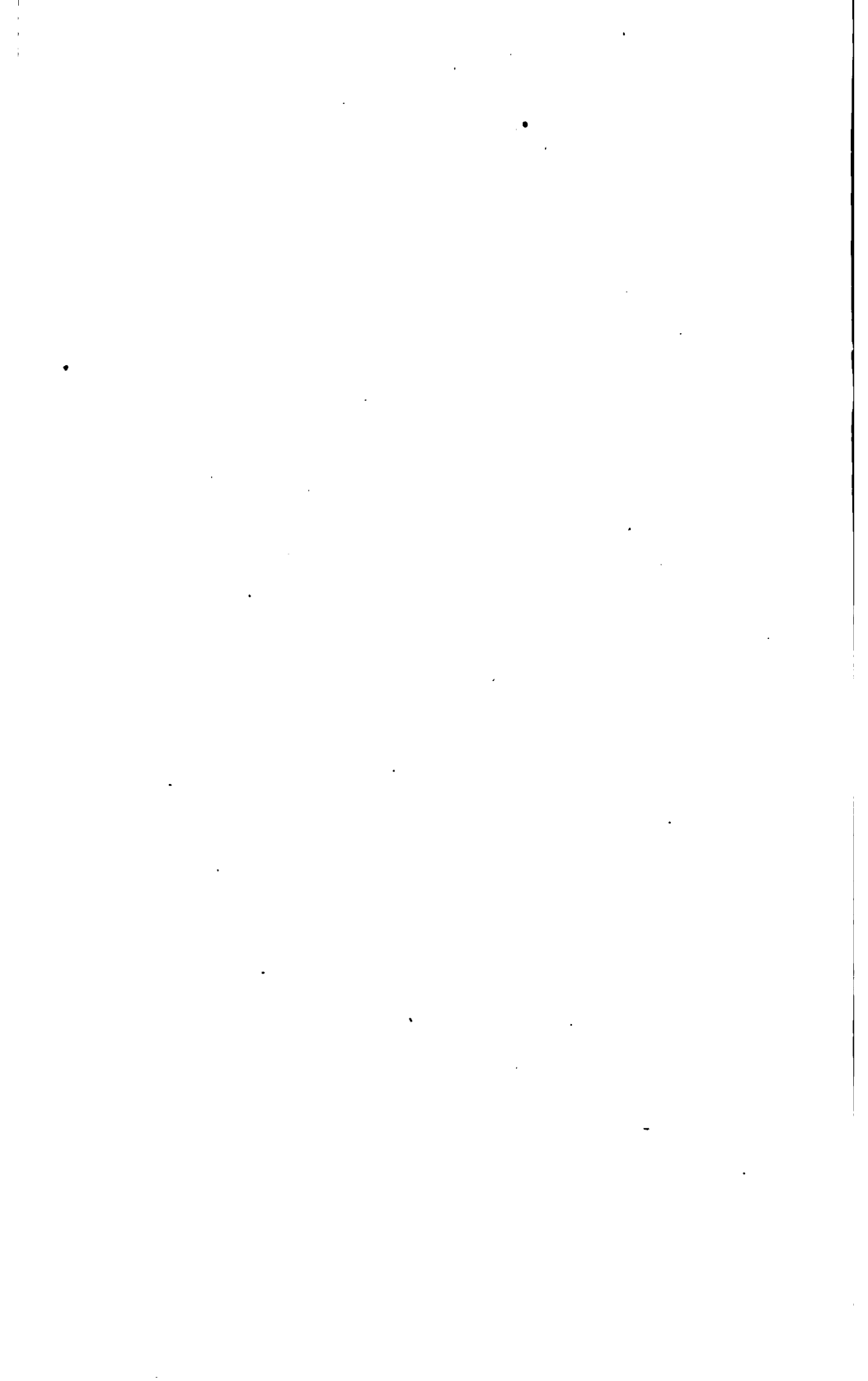
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